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THE GOVERNMENT OF THE PHILIPPINE ISLANDS

# WEATHER BUREAU

## MANILA CENTRAL OBSERVATORY

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# MONTHLY BULLETIN
## 1911

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

MANILA
BUREAU OF PRINTING
1911

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# INTRODUCTION.

The form of the BULLETIN as adopted in 1907 and slightly modified in 1908 and 1909 will be retained. To facilitate the understanding of the tables of observations published in the Meteorological Bulletin we beg to remark that the hours of observations are, for the first and second class stations, 2 a. m., 6 a. m., 10 a. m., 2 p. m., 6 p. m. and 10 p. m.; for third and fourth class stations, 6 a. m. and 2 p. m. The time used by the observers is that of the one hundred and twentieth meridian east of Greenwich. The barometer readings are corrected for capillarity and temperature and reduced to sea level, but *not* to standard gravity. The correction which is to be applied to the readings as given, whenever it is desired to reduce them to standard gravity, will be found at the head of each meteorological table.

We subjoin a list of all the meteorological stations of the Weather Bureau in operation on January, 1911, together with the names of the respective observers, who must be held largely responsible for the accuracy of the observations published in the bulletins.

### SECONDARY STATIONS AND OBSERVERS OF THE WEATHER BUREAU.

| Station. | North latitude. | | East longitude. | | Observers. | Class. |
|---|---|---|---|---|---|---|
| | ° | ′ | ° | ′ | | |
| Isabela, Basilan | 6 | 42 | 121 | 58 | Inocencio Rodríguez | IV |
| Zamboanga | 6 | 54 | 122 | 05 | Francisco Ventus | III |
| Davao | 7 | 01 | 125 | 35 | Lamberto García | III |
| Cotabato | 7 | 13 | 124 | 15 | Santiago Villaflor | III |
| Butuan | 8 | 56 | 125 | 32 | Generoso Copia | III |
| Dumaguete | 9 | 18 | 123 | 19 | Matías Ordiales | III |
| Yap, Western Carolines | 9 | 29 | 138 | 08 | Mateo Giménez | III |
| Tagbilaran | 9 | 38 | 123 | 51 | Vicente L. Fama | III |
| Surigao | 9 | 48 | 125 | 29 | Leoncio G. Santos | II |
| Maasin | 10 | 08 | 124 | 50 | Águedo Espina | III |
| Cebú | 10 | 18 | 123 | 54 | Domingo de los Ángeles | I |
| Iloilo | 10 | 42 | 122 | 34 | Ricardo A. Luna | I |
| Cuyo | 10 | 51 | 121 | 01 | Román Kabigting | III |
| Ormoc | 11 | 00 | 124 | 36 | Pedro Baltasar | I |
| Tacloban | 11 | 15 | 125 | 00 | Perfecto Paulino | II |
| Capiz | 11 | 35 | 122 | 45 | Juan Lugod | II |
| Borongan | 11 | 37 | 125 | 26 | Alejandro Factor | IV |
| Calbayog | 12 | 04 | 121 | 36 | Segundo Peñaflorida | II |
| Masbate | 12 | 22 | 123 | 36 | H. L. Heath | IV |
| Romblon | 12 | 35 | 122 | 16 | Ramón Pazos | III |
| Legaspi | 13 | 09 | 123 | 45 | Bernardino Costa | I |
| Sumay, Guam | 13 | 24 | 144 | 38 | Herbert Taylor | III |
| Calapan | 13 | 25 | 121 | 11 | Aquilino Nokom | III |
| Virac | 13 | 35 | 124 | 14 | Gregorio Peralta | III |
| Nueva Caceres | 13 | 37 | 123 | 11 | Eduardo Ontengco | III |
| Batangas | 13 | 45 | 121 | 03 | Enrico Cabral | III |
| Atimonan | 14 | 00 | 121 | 55 | León G. Guinto | I |
| Silang | 14 | 14 | 120 | 58 | Marcos Medina | IV |
| Paracale | 14 | 17 | 122 | 47 | Benito Pelaez | II |
| Santa Cruz, La Laguna | 14 | 18 | 121 | 25 | Doroteo Eusebio | III |
| Antipolo | 14 | 36 | 121 | 10 | Patricio Yabao | IV |
| Iba | 15 | 20 | 119 | 58 | Deogracias Tablan | III |
| San Isidro | 15 | 22 | 120 | 53 | Bernardo Pecache | II |
| Tarlac | 15 | 30 | 120 | 35 | Valeriano Magat | IV |
| Dagupan | 16 | 03 | 120 | 20 | Domingo Torres | I |
| Bolinao | 16 | 24 | 119 | 53 | Ezequiel Reinoso | II |
| Baguio | 16 | 25 | 120 | 36 | José M.ª Sison | I |
| San Fernando, Union | 16 | 37 | 120 | 19 | Francisco Burgos | III |
| Echagüe | 16 | 41 | 121 | 39 | Godofredo Resurrección | III |
| Candon | 17 | 12 | 120 | 26 | Luis Quismorio | IV |
| Vigan | 17 | 34 | 120 | 23 | Pastor Daroy | II |
| Tuguegarao | 17 | 36 | 121 | 40 | José C. de León | II |
| Laoag | 18 | 12 | 120 | 35 | José Saez | III |
| Aparri | 18 | 22 | 121 | 38 | Manuel Delgado | I |
| Santo Domingo, Batanes Islands | 20 | 28 | 121 | 59 | Claudio Castillejos | III |

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After careful investigation, a more accurate correction to the barometric observations of Calbayog has been determined, due mostly to the elevation of the barometer above the level of the sea. The correction found is —0.37 millimeter which is to be applied to the observations of last year—1910—when compared with those of this year. See introduction to the BULLETIN for January, 1908.

The signs and symbols employed in this BULLETIN are the following:

| Symbol. | Equal to— | Symbol. | Equal to— |
|---|---|---|---|
| Ci. | Cirrus. | u | Ugly or threatening weather. |
| Ci.-S | Cirro-stratus. | v | Visibility of distant objects. |
| Ci.-Cu. | Cirro-cumulus. | w | Wet or heavy dew. |
| A.-Cu. | Alto-cumulus. | ● | Rain. |
| A.-S. | Alto-stratus. | ≡ | Fog or mist. |
| S.-Cu. | Strato-cumulus. | ⌓ | Dew. |
| N. | Nimbus. | ⊕ | Solar corona. |
| Cu. | Cumulus. | ◓ | Lunar corona. |
| Cu.-N. | Cumulo-nimbus. | ∪ | Lunar halo. |
| S. | Stratus. | ○ | Solar halo. |
| Fr.-Cu. | Fracto-cumulus. | < | Heat lightning. |
| Fr.-N. | Fracto-nimbus. | ☈ | Thunderstorm. |
| Fr.-S. | Fracto-stratus. | ⊤ | Thunder without lightning. |
| S.-cf. | Stratus-cumuliformis. | ↙ | Strong wind. |
| N.-cf | Nimbus-cumuliformis. | ⌒ | Rainbow. |
| M.-Cu. | Mammato-cumulus. | ∞ | Dry mist. |
| b | Bright, clear sky. | S. | Smooth sea. |
| c | Cloudy weather. | T. | Tide rips. |
| d | Drizzling, light rain. | L. | Long rolling sea. |
| g | Gloomy or stormy looking weather. | M. | Moderate sea or swell. |
| o | Overcast. | R. | Rough sea. |
| p | Passing showers of rain. | H. | Heavy sea. |
| q | Squally weather. | | |

NOTE.—A small zero ($^{\circ}$) or 2 ($^{2}$) used as an exponent to the above symbols indicates respectively that the intensity of the meteor denoted by the symbols thus affected was small or very great.

# INTRODUCCIÓN.

Conservamos en esta publicación la misma forma adoptada en 1907, y ligeramente modificada en 1908 y 1909. Para mejor inteligencia de los cuadros de observaciones que publicamos en el Boletín Meteorológico, téngase presente que las horas de observación para estaciones de primera y segunda clase son 2 a. m., 6 a. m., 10 a. m., 2 p. m., 6 p. m., y 10 p. m.; y en las de tercera y cuarta clase, 6 a. m. y 2 p. m. El tiempo seguido por nuestros observadores es el del meridiano 120 Este de Greenwich. Las lecturas barométricas se dan corregidas de capilaridad y temperatura y reducidas al nivel del mar, pero *no* á la gravedad normal. La corrección que por gravedad debe aplicarse, se da al principio de cada cuadro meteorológico.

Damos en el texto inglés una lista de todas nuestras estaciones con los nombres respectivos de los observadores, los cuales son en gran parte responsables de las observaciones que se publican en este BOLETÍN.

Después de investigar minuciosamente las observaciones barométricas de Calbayog se ha hallado una corrección de —0.37 mm. que se debe principalmente á la altura del barómetro sobre el nivel del mar. Si se quieren comparar, pues, las observaciones barométricas de este año con las del año próximo pasado es preciso aplicar dicha corrección á las alturas barométricas publicadas el año 1910. Véase la Introducción del BOLETÍN de de Enero de 1908.

Los signos y símbolos usados en este BOLETÍN son los siguientes:

| Símbolos. | Significado. | Símbolos. | Significado. |
|---|---|---|---|
| Ci. | Cirrus. | u | Tiempo feo ó amenazador. |
| Ci.-S. | Cirro-stratus. | v | Trasparencia del aire. |
| Ci.-Cu. | Cirro-cumulus. | w | Húmedo. |
| A.-Cu. | Alto-cumulus. | ● | Lluvia. |
| A.-S. | Alto-stratus. | ≡ | Niebla ó neblina. |
| S.-Cu. | Strato-cumulus. | ⌓ | Rocío. |
| N. | Nimbus. | ⊕ | Corona solar. |
| Cu. | Cumulus. | ◓ | Corona lunar. |
| Cu.-N. | Cumulo-nimbus. | ⋓ | Halo lunar. |
| S. | Stratus. | ○ | Halo solar. |
| Fr.-Cu. | Fracto-cumulus. | ⚡ | Relámpago sin trueno. |
| Fr.-N. | Fracto-nimbus. | ☈ | Tempestad de trueno. |
| Fr.-S. | Fracto-stratus. | ⊤ | Trueno sin relámpago. |
| S.-cf. | Stratus-cumuliformis | ↙ | Viento duro. |
| N.-cf. | Nimbus-cumuliformis. | ⌒ | Arco-iris. |
| M.-Cu. | Mammato-cumulus. | ∞ | Niebla seca. |
| b | Despejado. | S. | Mar lisa ó llana. |
| c | Nublado. | T. | Mar rizada. |
| d | Llovizna ó lluvia ligera. | L. | Mar tendida. |
| g | Mal cariz; tiempo cerrado, fosco. | M. | Mar moderada. |
| o | Cubierto. | R. | Mar gruesa. |
| p | Lluvia pasajera. | H. | Mar alborotada. |
| q | Achubascado. | | |

NOTA.—Un ° ó un ² puestos como exponentes de los signos, indican respectivamente una muy débil ó una muy fuerte intensidad en el meteoro que representan.

# BULLETIN FOR JANUARY, 1911.

# METEOROLOGICAL BULLETIN FOR JANUARY, 1911.

By Rev. JOSÉ CORONAS, S. J.,

*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The monthly mean of atmospheric pressure is slightly below that for January of the preceding year at all the stations on Luzon; and equal to it or a little above, at those in the Visayas and in Mindanao. The highest pressures were observed during the period from January 3 to 8, while the lowest occurred generally on the 28th.

The mean monthly temperature is for nearly all the stations somewhat higher than that for the corresponding month of 1910. The extremes registered at Manila were 33.5° C. and 18.4° C.

### PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR JANUARY, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from January, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from January, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Tagbilaran | 758.92? | ---------- | 760.73 | 1 | 756.90 | 24 | 26.9 | +0.5 | 34.1 | 27 | 21.2 | 3 |
| Surigao | 58.63 | +0.12 | 60.50 | 5 | 56.87 | 28 | 25.9 | + .5 | 30.6 | 29 | 20.7 | 11 |
| Cebu | 58.57 | + .05 | 60.47 | 5 | 56.68 | 28 | 26.2 | + .1 | 30.8 | 9 | 21.5 | 15 |
| Iloilo | 58.79 | — .08 | 60.77 | 5 | 56.67 | 28 | 26.3 | + .4 | 33 | 27 | 21.3 | 12 |
| Ormoc | 58.79 | — .01 | 60.70 | 5 | 56.98 | 28 | 25.1 | — .2 | 31.8 | 27 | 17.7 | 3 |
| Tacloban[1] | 59.81 | ---------- | 61.71 | 4 | 58.01 | 28 | 26.3 | ---------- | 33.3 | 24 | 22 | 3 |
| Capiz | 59.44 | ---------- | 61.55 | 3 | 57.13 | 28 | 26 | + .2 | 32 | 31 | 21.2 | 3 |
| Calbayog | 59.12 | — .03 | 60.84 | 4 | 57.18 | 28 | 25.1 | + .2 | 31.9 | 22 | 18.8 | 3 |
| Legaspi | 59.48 | — .40 | 61.47 | 4 | 57.35 | 28 | 25.8 | + .3 | 31.5 | 15 | 18.5 | 12 |
| Atimonan | 59.92 | — .44 | 62.29 | 8 | 57.42 | 28 | 25.4 | — .1 | 29.4 | 29 | 19.3 | 3 |
| Paracale | 60.02 | ---------- | 62.50 | 7 | 57.58 | 28 | 25.3 | ---------- | 31.1 | 28 | 20.1 | 2 |
| Manila | 59.77 | — .39 | 61.99 | 4 | 57.20 | 28 | 25 | + .6 | 33.5 | 31 | 18.4 | 4 |
| San Isidro | 59.65 | — .62 | 61.97 | 8 | 57.08 | 28 | 25 | ---------- | 33.1 | 31 | 17.8 | 4 |
| Dagupan | 59.46 | — .56 | 61.72 | 5 | 56.99 | 28 | 25.9 | + .6 | 34.6 | 26 | 18.8 | 4 |
| Bolinao | 59.51 | — .41 | 61.84 | 5 | 57.02 | 28 | 25.8 | + .6 | 33.7 | 31 | 17.5 | 9 |
| Baguio[2] | 636.74 | — .34 | 638.73 | 5 | 634.96 | 28 | 16.9 | + .3 | 24.4 | 26 | 11.6 | 20 |
| Vigan | 759.64 | — .53 | 761.99 | 5 | 757.23 | 29 | 25.1 | — .4 | 32.4 | 7 | 18.8 | 21 |
| Tuguegarao | 60.81 | — .93 | 63.94 | 8 | 57.43 | 28 | 23.6 | + .1 | 36.4 | 31 | 17.6 | 9 |
| Aparri | 61.36 | — .89 | 64.56 | 7 | 57.90 | 27 | 23.1 | — .1 | 31.8 | 31 | 18.6 | 21 |

[1] The barometric readings of this station seem to be too high.
[2] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—The greater number of our stations report for this month a total rainfall below that for January, 1910. The amount of rain collected in the pluviometers of the Central Observatory departs from that of the same month of last year by +1.9 millimeters and from the normal for January by —19 millimeters.

## RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JANUARY, 1911.

| Station. | Total. | Departure from January, 1910. | Rainy days. | Departure from January, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from January, 1910. | Rainy days. | Departure from January, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Isabela, Basilan | 68.9 | + 25 | 7 | — 4 | 28.4 | 7 | Virac | 187.8 | — 2.2 | 23 | + 1 | 29.7 | 21 |
| Zamboanga[1] | 14 | | | | 7.6 | 31 | Nueva Caceres | 47.1 | — 58.7 | 12 | — 2 | 8.9 | 6 |
| Davao | 82.8 | — 77.7 | 7 | — 2 | 23.4 | 10 | Batangas | 16.7 | + 13.1 | 5 | — 2 | 9.1 | 24 |
| Cotabato | 77.7 | — 67.2 | 14 | — 1 | 22.9 | 19 | Atimonan | 144.6 | + 57.8 | 17 | + 1 | 62.4 | 24 |
| Butuan | 161.8 | —103.1 | 25 | — 3 | 39.4 | 6 | Silang | 9.4 | — 5.9 | 2 | — 3 | 4.8 | 25 |
| Dumaguete | 16.3 | | 9 | | 4.5 | 17 | Paracale | 380.3 | | 19 | | 106.9 | 24 |
| Yap, Western Carolines | 45.5 | —126.4 | 17 | — 7 | 10.9 | 24 | Santa Cruz, La Laguna | 51 | | 7 | | 30.2 | 24 |
| Tagbilaran | 82.4 | — 80.6 | 11 | — 3 | 26.9 | 6 | Antipolo | 18.5 | | 6 | | 8.4 | 24 |
| Surigao | 249.1 | —366.6 | 21 | — 5 | 42.7 | 7 | Manila | 8.1 | + 1.9 | 5 | + 2 | 4.6 | 25 |
| Maasin | 192.6 | — 46.2 | 8 | — 4 | 58.7 | 6 | Iba | 9.9 | | 1 | | 9.9 | 22 |
| Cebu | 68.1 | — 50 | 6 | — 6 | 28.2 | 6 | San Isidro | 14 | + 3.2 | 2 | — 3 | 8.9 | 27 |
| Iloilo | 8 | — 17 | 6 | — 4 | 6.1 | 7 | Dagupan | 1.5 | — 34.3 | 2 | — 3 | 1 | 14 |
| Cuyo | 0 | | 0 | | 0 | 0 | Bolinao | 3.1 | + 2.6 | 1 | 0 | 1.8 | 20 |
| Ormoc | 85.6 | — 41.6 | 12 | — 8 | 33.8 | 7 | Baguio | 2.3 | — 43.5 | 1 | — 4 | 2.3 | 26 |
| Tacloban | 84.3 | —255.3 | 12 | —16 | 31.1 | 7 | San Fernando, Union | .8 | — 23.9 | 1 | — 3 | .8 | 1 |
| Capiz | 48.4 | — 30.8 | 13 | + 3 | 9.4 | 10 | Echagüe | 32.8 | — 11.6 | 11 | 0 | 10.9 | 22 |
| Borongan | 457 | —340.9 | 26 | — 3 | 98.8 | 17 | Candon | 0 | — 3.6 | 0 | — 3 | 0 | 0 |
| Calbayog | 176.6 | + 18.8 | 19 | — 4 | 40.6 | 13 | Vigan | 0 | 0 | 0 | 0 | 0 | 0 |
| Masbate | 73.7 | —205.8 | 14 | — 5 | 12.4 | 21 | Tuguegarao | 4.3 | — 27.2 | 2 | — 2 | 4.3 | 2 |
| Romblon | 64.5 | —154.9 | 10 | — 7 | 26.7 | 4 | Laoag | 2.5 | + 2.2 | 1 | + 1 | 2.5 | 1 |
| Legaspi | 168.8 | —467.7 | 14 | —12 | 35.6 | 8 | Aparri | 303.8 | + 194 | 18 | + 4 | 67.4 | 11 |
| Sumay, Guam | 79.1 | + 15.7 | 13 | — 3 | 19 | 5 | Santo Domingo, Batanes Is. | 289.1 | + 163.9 | 17 | — 4 | 60.4 | 22 |
| Calapan | 65.3 | — 16.5 | 13 | — 5 | 19.7 | 4 | | | | | | | |

[1] 23 days of observation only.

## DEPRESSIONS AND TYPHOONS.

During this month the Philippine Archipelago has been entirely free from atmospheric perturbations worthy of special mention. The observations of Guam and Yap gave at least twice indications of slight depressions south of the Western Carolines or of the Pelew Islands; but owing to the lack of further data, we are unable to state whether these were true depressions, or merely extended areas of low pressure.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La media mensual de la presión atmosférica es algo menor que la de Enero del año próximo pasado para todas las estaciones de Luzón, y es casi idéntica á la misma ó ligeramente mayor en las estaciones de Visayas y Mindanao. Las máximas presiones del mes se observaron durante el período comprendido entre los días 3 y 8. Las mínimas presiones tuvieron lugar generalmente el día 28.

La temperatura media mensual es para casi todas las estaciones ligeramente mayor que la del año pasado. Las temperaturas extremas registradas en Manila fueron 33.5° C. y 18.4° C.

**Precipitación acuosa.**—La mayoría de nuestras estaciones dan para este mes un total de lluvia inferior al de Enero 1910. La cantidad de agua recogida en los pluviómetros del Observatorio difiere de la del año pasado en +1.9 mm., y de la normal de este mes en —19 mm.

## DEPRESIONES Y TIFONES.

Este mes se ha visto libre nuestro Archipiélago de perturbaciones atmosféricas que sean dignas de especial mención. Las observaciones de Guam y Yap dieron indicios unas dos veces cuando menos de alguna ligera depresión hacia el Sur de las Carolinas Occidentales ó de las Islas Palaos; pero por falta de datos nos es imposible precisar si fueron verdaderas depresiones ó más bien áreas dilatadas de baja presión.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

**[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]**

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 761.50 | 23.6 | 30.4 | 18.7 | 25 | 26.4 | 26.1 | 26.3 | 27.5 | 28 | 81.8 | 17.5 | 3.3 | 2.3 |
| 2 | 60.86 | 24.1 | 30.4 | 19.8 | 25.3 | 26.7 | 26.3 | 26.3 | 27.4 | 28.1 | 82.3 | 18.2 | 3.3 | 2.3 |
| 3 | 61.56 | 23.4 | 29.8 | 18.7 | 25.3 | 26.8 | 26.3 | 26.4 | 27.3 | 28 | 82.5 | 17.4 | 2.8 | 2.2 |
| 4 | 61.99 | 24 | 29.4 | 18.4 | 25.1 | 26.2 | 26.2 | 26.3 | 27.3 | 28 | 84.5 | 18.6 | 2.3 | 1.6 |
| 5 | 61.75 | 25.8 | 31.5 | 21.6 | 25.6 | 26.8 | 26.3 | 26.4 | 27.3 | 28 | 85 | 20.8 | 2.4 | 1.8 |
| 6 | 61.49 | 25.7 | 31.8 | 22.6 | 26.2 | 27.2 | 26.5 | 26.6 | 27.3 | 28.1 | 83.5 | 20.3 | 2.2 | 1.8 |
| 7 | 61.98 | 25.4 | 30.8 | 21.8 | 26.1 | 27.1 | 26.7 | 26.8 | 27.3 | 28 | 81 | 19.4 | 2.4 | 1.8 |
| 8 | 61.92 | 24.2 | 30.1 | 20.2 | 25.9 | 27.1 | 26.6 | 26.8 | 27.2 | 27.9 | 78.1 | 17.4 | 3 | 2.2 |
| 9 | 59.54 | 24.4 | 30.6 | 19.3 | 25.6 | 26.8 | 26.6 | 26.8 | 27.2 | 28 | 81.7 | 18.5 | 2.6 | 2.1 |
| 10 | 58.05 | 25.9 | 31.3 | 21.2 | 25.8 | 27.3 | 26.5 | 26.8 | 27.3 | 28 | 82.2 | 20.2 | 3.6 | 2.5 |
| 11 | 58.03 | 26.3 | 31.2 | 22.2 | 26.7 | 28.2 | 26.9 | 27.1 | 27.3 | 28 | 81 | 20.4 | 3.3 | 2.3 |
| 12 | 59 | 25.5 | 31 | 22.1 | 27 | 28 | 27 | 27.3 | 27.3 | 28 | 78.7 | 18.9 | 2.6 | 2.1 |
| 13 | 60.46 | 24.8 | 31 | 21.1 | 26.5 | 27.4 | 27 | 27.1 | 27.2 | 27.9 | 79.6 | 18.3 | 2.7 | 2.2 |
| 14 | 60.50 | 26 | 31.6 | 22.1 | 26.3 | 27.3 | 27 | 27.1 | 27.2 | 27.9 | 79.7 | 19.8 | 2.8 | 2.3 |
| 15 | 59.22 | 25.8 | 31.5 | 21.4 | 26.4 | 28 | 27 | 27.2 | 27.3 | 28 | 80.6 | 19.8 | 3.3 | 2.5 |
| 16 | 59.56 | 25 | 30.8 | 20.7 | 26.8 | 28 | 27.2 | 27.3 | 27.2 | 27.9 | 80.3 | 18.7 | 3.4 | 2.6 |
| 17 | 59.92 | 24.3 | 30.7 | 19.1 | 26 | 27.3 | 27 | 27.2 | 27.3 | 27.9 | 81.9 | 18.2 | 2.7 | 2.2 |
| 18 | 60.41 | 25.3 | 31.4 | 20.2 | 26 | 27.8 | 26.9 | 27.2 | 27.3 | 27.7 | 80.1 | 18.8 | 3.9 | 2.9 |
| 19 | 60.66 | 25 | 30.8 | 20.4 | 26.1 | 28 | 27 | 27.3 | 27.2 | 27.8 | 79.2 | 18.4 | 3.5 | 2.7 |
| 20 | 61 | 23.8 | 29.8 | 20.6 | 26.1 | 27 | 27 | 27 | 27.2 | 27.8 | 82.4 | 18 | 2.1 | 1.8 |
| 21 | 60.63 | 24.6 | 31 | 20 | 25.7 | 27.6 | 26.7 | 27 | 27.3 | 27.8 | 79.3 | 18.1 | 3.6 | 2.8 |
| 22 | 60.26 | 25.2 | 30.9 | 21.4 | 26.3 | 27.7 | 26.9 | 27.1 | 27.3 | 27.9 | 79.2 | 18.7 | 3.1 | 2.5 |
| 23 | 59.18 | 24.3 | 29.2 | 21.2 | 26.2 | 27.4 | 26.9 | 27.1 | 27.3 | 27.8 | 82.1 | 18.4 | 2.3 | 1.9 |
| 24 | 58.42 | 24.4 | 29.8 | 20 | 25.8 | 26.9 | 26.8 | 26.9 | 27.3 | 27.8 | 78.9 | 17.8 | 2.9 | 2.5 |
| 25 | 59.05 | 24.1 | 28.6 | 21.4 | 25.7 | 26.7 | 26.6 | 26.9 | 27.3 | 27.8 | 84.1 | 18.8 | 1.3 | 1.4 |
| 26 | 58.17 | 24.9 | 30.8 | 20.4 | 25.6 | 27.1 | 26.5 | 26.8 | 27.2 | 27.8 | 82.4 | 19.1 | 3 | 2.4 |
| 27 | 57.40 | 25.2 | 31.2 | 20.4 | 25.9 | 27.3 | 26.7 | 27.1 | 27.3 | 27.8 | 81.4 | 19.2 | 3.3 | 2.6 |
| 28 | 57.20 | 25.8 | 32.7 | 21.2 | 26.3 | 28.3 | 26.9 | 27.4 | 27.3 | 27.8 | 81.4 | 19.7 | 3.5 | 2.6 |
| 29 | 57.65 | 25.3 | 32.4 | 20.2 | 26.5 | 28.2 | 27 | 27.4 | 27.3 | 27.7 | 79.8 | 18.8 | 4 | 3 |
| 30 | 57.89 | 25.6 | 31.7 | 20.7 | 26.3 | 28.1 | 27 | 27.4 | 27.3 | 27.8 | 79 | 19 | 3.7 | 2.8 |
| 31 | 57.77 | 26.5 | 33.5 | 21.1 | 26.7 | 28.7 | 27.1 | 27.5 | 27.3 | 27.8 | 77.8 | 19.6 | 4.7 | 3.4 |
| Mean | 759.77 | 25 | 30.9 | 20.7 | 26 | 27.4 | 26.7 | 27 | 27.3 | 27.9 | 81 | 18.9 | 3 | 2.3 |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 93.6 | 72.1 |
| Departure from normal | —1.25 | 0 | +0.9 | +0.3 | -------- | -------- | -------- | -------- | -------- | -------- | +3.0 | +0.7 | -------- | -------- |

| Date. | Wind. | | | | Clouds. | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | |
| | | | | | | Upper. | Lower. | | | | |
| | | *Km.* | *Km.* | | *0–10.* | | | *h.* | *m.* | *mm.* | |
| 1 | SE quad. | 127.5 | 14.5 | ESE, WbyN | 6 | Ci. | Cu. ENE | 8 | 10 | -------- | ⊤° p. |
| 2 | SE | 126.5 | 14 | SE | 4.2 | Ci. NNE | Cu. ENE | 9 | 00 | -------- | |
| 3 | ESE | 100.5 | 16 | WNW | 5.2 | Ci.-S. SSE | Cu. E | 7 | 25 | -------- | |
| 4 | NE quad. | 92.5 | 11.5 | WSW | 6.3 | Ci., Ci.-S. | Cu. E | 5 | 00 | 0.3 | ●° p. |
| 5 | N quad. | 55.5 | 9 | SW, N | 7.2 | A.-Cu. | Cu. E | 5 | 45 | -------- | |
| 6 | NNE | 141 | 12.5 | N | 6.3 | A.-Cu. NE | Cu. ENE | 6 | 00 | 1.4 | ●° a. p. |
| 7 | E quad. | 57.5 | 9.5 | NW | 8.4 | A.-Cu. E | Cu. E | 4 | 50 | -------- | d° p. |
| 8 | N quad. | 92 | 10 | W | 6.8 | Ci.-S. S | Cu. E | 5 | 55 | -------- | ∞ a. |
| 9 | W | 72.5 | 9.5 | W, NW | 5.8 | Ci. | Cu.-N. E | 5 | 10 | -------- | |
| 10 | NE quad. | 109.5 | 8 | WSW | 2.7 | Ci. SE | Cu. ENE | 9 | 00 | -------- | |
| 11 | W | 87.5 | 10 | W | 4.4 | Ci. | Cu. E | 8 | 15 | -------- | |
| 12 | E quad. | 90 | 13.5 | WNW | 8.5 | A.-Cu. | Cu.-N. E | 5 | 35 | .3 | p° p. |
| 13 | NE quad. | 74 | 8 | WNW | 7.4 | A.-Cu. | Cu. EbyN | 4 | 15 | -------- | |
| 14 | NE quad. | 121 | 14 | NW | 7.8 | A.-Cu. | Cu. NE | 5 | 20 | -------- | ⌒ a. |
| 15 | SE quad. | 144 | 14 | WSW | 3.5 | A.-Cu. E | Cu. NE | 8 | 50 | -------- | |
| 16 | SE quad. | 126.5 | 17 | SE | 4.6 | A.-Cu. E | Cu. E | 7 | 45 | -------- | |
| 17 | W quad. | 92 | 16 | NW | 2.8 | Ci | Cu. E | 8 | 25 | -------- | |
| 18 | W quad. | 183 | 17 | WNW | 3.2 | Ci. | Cu. NE | 9 | 15 | -------- | |
| 19 | N | 233.5 | 15.5 | NNE | 6.2 | Ci., A.-Cu. | Cu. E | 6 | 05 | -------- | |
| 20 | N | 151.5 | 15 | N | 8.7 | Ci.-S. | Cu.-N. E | 2 | 50 | -------- | d° p. |
| 21 | N quad. | 95.5 | 13 | NNW | 4.8 | Ci. | Cu. E | 8 | 00 | -------- | Ω a. |
| 22 | W quad. | 97.5 | 15 | WbyN | 5.2 | Ci. | Cu. E | 7 | 15 | -------- | |
| 23 | NE quad. | 91.5 | 9.5 | NNE, W | 8 | Ci.-S. | Cu. E | 4 | 30 | -------- | ○ p° p. |
| 24 | NE quad. | 140.5 | 17 | N | 8 | A.-Cu. | Cu. ESE | 4 | 45 | 1.5 | ● p. |
| 25 | N quad. | 86 | 10.5 | NNE | 8.6 | A.-Cu. E | S.-Cu. E | 2 | 10 | 4.6 | ● a. p. |
| 26 | WNW | 107 | 15 | NW | 3.7 | Ci.-S., A.-Cu. | Cu. E | 10 | 00 | -------- | |
| 27 | SW quad. | 111 | 14 | WbyN | 2.1 | Ci. | Cu. E | 9 | 30 | -------- | |
| 28 | SE | 104 | 11.5 | SE, WSW | 2.6 | Ci. | Cu. ESE | 9 | 15 | -------- | ≡ Ω a. |
| 29 | E quad. | 153.5 | 17.5 | ESE | 3.3 | Ci. | Cu. | 9 | 35 | -------- | ≡ Ω a. |
| 30 | E quad. | 132.5 | 14.5 | NWbyW | 9 | Ci.-S. | Cu. E | 8 | 20 | -------- | |
| 31 | SE | 139 | 15.5 | SE | 2.9 | Ci. | Cu. | 9 | 55 | -------- | |
| Mean | -------- | 114.1 | 13.1 | -------- | 5.6 | -------- | -------- | 6 | 58 | -------- | |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 216 | 05 | 8.1 | |
| Departure from normal | -------- | —52.1 | -------- | -------- | +0.4 | -------- | -------- | +21 | 40 | —19.0 | |

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[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### TAGBILARAN.

**[$\phi$=9° 38′ N; $\lambda$=123° 51′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.86 mm.]**

| Day. | Pressure (mean). | Temperature.[2] | | | Relative humidity (mean).[2] | Wind.[2] | | Clouds.[2] | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 760.73 | 26.2 | 31.6 | 22.4 | 81.4 | Variable | 1.2 | 7 | Ci.-S. SSW | Cu.-N., N. ENE | 0.5 | d a. p. ● p. |
| 2 | 60.24 | 26.5 | 33.3 | 21.5 | 72.4 | Variable | 1.4 | 7 | Ci.-S. ENE | Cu. ENE | ------ | |
| 3 | 60.53 | 26 | 31.1 | 21.2 | 73.2 | N quad. | 1 | 8 | Ci.-S. ENE | Cu. NE | ------ | |
| 4 | 60.51 | 26.4 | 30.2 | 23 | 82.2 | NNE | .6 | 7.6 | Ci.-S. ENE | Variable ENE | 5.3 | ● a. p. |
| 5 | 60.56 | 27 | 33.7 | 22.4 | 77.2 | S quad. | 1 | 5.8 | Ci.-S. ENE | Cu. NE, ENE | ------ | |
| 6 | 60.23 | 25.9 | 31.2 | 23.1 | 86.2 | SE | 1.6 | 9.2 | Ci.-S. | Cu.-N. ENE | 26.9 | ● ⊤ p. |
| 7 | 60.38 | 26.7 | 30.7 | 22.3 | 82.2 | S quad. | .8 | 9.8 | A.-S. ENE | Cu.-N. ENE | 3.1 | d ● p. |
| 8 | 60.27 | 27 | 32.3 | 23.6 | 80.4 | Variable | 1.2 | 10 | A.-S., Ci.-S. | N. ENE | .6 | d p. |
| 9 | 59.04 | 27.2 | 32.1 | 23.5 | 78.4 | S quad. | 1.2 | 9 | Ci.-S. | Cu., Cu.-N. ENE, SE | 2.3 | ◯ ● a. ψ p. |
| 10 | 57.74 | 26.6 | 32.9 | 23.1 | 81.2 | Variable | 1 | 8 | Ci.-S. | Cu.,Cu.-N.ENE,SSW | ------ | ◯ a. |
| 11 | 57.60 | 26.8 | 33.2 | 22 | 76.8 | SE | 1 | 2 | Ci.-S. | Cu. NE, WSW | ------ | |
| 12 | 58.15 | 26.8 | 32.9 | 22.9 | 78.6 | Variable | 1.4 | 3.4 | Ci.-S. | Cu., Cu.-N. ENE,NW | ------ | ⊤ p. |
| 13 | 59.29 | 26.3 | 30.4 | 23.9 | 84.2 | N quad. | .8 | 6.6 | Ci.-S. | Cu. ENE | 5.1 | ● ⊤ d ⌒ p. |
| 14 | 59.69 | 27.1 | 33.8 | 22.7 | 79.2 | N quad. | 1.2 | 5.8 | Ci.-S. ENE | Cu., Cu.-N. ENE | ------ | |
| 15 | 59.30 | 27.1 | 33 | 22.3 | 78.4 | Variable | 1 | 4.4 | Ci.-S. ENE | Cu. NNE | ------ | ⊤ p. |
| 16 | 58.90 | 27.3 | 33.4 | 23.6 | 79.2 | S quad. | 1 | 5.6 | ------ | Cu.-N. ENE | ------ | |
| 17 | 58.86 | 27.5 | 32.4 | 22.9 | 78.2 | N quad. | .6 | 8.2 | Ci.-S. | S.-Cu. Cu. NE, ESE | ------ | ⊤ p. |
| 18 | 59.18 | 27.2 | 32.4 | 24 | 78.4 | N quad. | 1.2 | 7.6 | Ci.-S. | Cu.-N., N. NE, ENE | .5 | ⊤ a. p. d² p. |
| 19 | 58.93 | 27.3 | 33.7 | 22.1 | 77.2 | N quad. | .8 | 6.6 | Ci.-S. | Cu.-N. ENE | ------ | |
| 20 | 59.53 | 27 | 31.7 | 23.9 | 81.2 | NW, NE | .8 | 8 | A.-S. ESE | Cu.-N. ENE | 25.4 | ●² a. p. ⊤ p. |
| 21 | 59.54 | 26.8 | 31.9 | 22.2 | 81 | E quad. | .6 | 6.4 | Ci.-S. NE | Cu. ENE | 2.3 | d ● p. |
| 22 | 59.56 | 27.2 | 32.4 | 22.8 | 76.8 | Variable | .6 | 2.8 | Ci.-S. | Cu. ENE | ------ | |
| 23 | 58.41 | 26.8 | 32.2 | 22 | 76.5 | N quad. | .8 | 5.8 | Ci.-S. SSE, ENE | Cu. ENE | ------ | |
| 24 | 56.90 | 26.8 | 32.9 | 22.6 | 76 | E quad. | 1 | 2.2 | A.-S. | Cu. ENE | ------ | |
| 25 | 57.50 | 27.2 | 33.7 | 23.4 | 78.6 | N quad. | .8 | 5.8 | A.-S. | Cu.-N. ENE | ------ | |
| 26 | 57.34 | 27.2 | 32.3 | 23 | 77.2 | N quad. | .8 | 5.4 | Ci.-S. | Cu.,Cu.-N. ENE,ESE | ------ | |
| 27 | 56.93 | 27.8 | 34.1 | 23.4 | 76.6 | Variable | .8 | 7.4 | A.-S. SW | Cu.-N. SW | ------ | |
| 28 | 57.03 | 27.5 | 33.9 | 22.9 | 79.2 | Variable | 1.2 | 3.6 | Ci.-S. | Cu., N ENE, WNW | ------ | d° p. |
| 29 | 57.92 | 27.1 | 31.9 | 22.8 | 78.2 | NW, SW | 1 | 6.8 | Ci.-S. ENE | Cu. ENE | ------ | |
| 30 | 58.07 | 27.7 | 33.1 | 22.2 | 74.2 | NW, SSW | 1.4 | 6 | Ci.-S. | Cu. ENE | ------ | |
| 31 | 57.64 | 26.8 | 31.9 | 23.4 | 81.8 | NNE | .6 | 5 | Ci.-S. | Fr.-N. ENE | 10.4 | ⊤ a. ● a. p. |
| Mean | 758.92 | 26.9 | 32.5 | 22.8 | 78.8 | ------ | 1 | 6.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 82.4 | |

### SURIGAO.

**[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 759.94 | 26.5 | 29.3 | 23.7 | 83.7 | NE | 2.5 | 8.3 | Ci.-S. E | Fr.-N. ENE | 11 | ●° a. p° p. |
| 2 | 59.77 | 26.8 | 29.7 | 23.7 | 78.8 | NNE, NE | 2.3 | 6.7 | Ci.-S. NE | Cu. NNE | ------ | ● a. |
| 3 | 60.12 | 25.3 | 26.1 | 23.4 | 87 | NNW | 2.3 | 8.8 | Ci.-S. | Fr.-N. NNE | 11 | d p. |
| 4 | 60.36 | 25.4 | 28.1 | 23.1 | 90 | NE quad. | 1.3 | 8.2 | Ci., Ci.-S. | Fr.-N., Cu.-N. NE | 8.8 | ●° a. p. |
| 5 | 60.50 | 25.5 | 29 | 22.2 | 89.3 | N quad. | 1.2 | 6 | Ci.-S. NE | Cu.-N. E | ------ | ≡ a. Ω° p. |
| 6 | 59.62 | 25.4 | 29.7 | 22.8 | 92.5 | Variable | .7 | 8.2 | Ci.-S. NE | Cu.-N. E | 17.8 | Ω² a. ●° a. p. |
| 7 | 59.90 | 25 | 28.5 | 23.2 | 94.2 | NE quad. | 1 | 8.8 | A.-Cu. E | Cu.-N., Fr.-N. E | 42.7 | ●° a. ●² p. |
| 8 | 59.69 | 26.2 | 28.9 | 23.3 | 88 | NE, NNE | 2 | 9 | ------ | Cu.-N. ENE | 14.8 | ●° a. p. |
| 9 | 58.41 | 25.8 | 30.2 | 23.3 | 88.3 | E quad. | 1 | 6.2 | Ci.-S. NE | Cu.-N. E | 3.3 | ●° a. p. ↙° p. |
| 10 | 57.49 | 25.1 | 28.8 | 21.8 | 89.7 | E quad. | .8 | 5.5 | Ci.-S. NE | N.-cf. E | ------ | ≡ a. |
| 11 | 57.52 | 24.8 | 29.4 | 20.7 | 89.7 | SE quad. | .7 | 3.5 | A.-Cu. SE | Cu. E | ------ | Ω² a. p. |
| 12 | 57.92 | 26 | 29.5 | 23 | 88.2 | Variable | 1 | 4.5 | Ci. NE | Cu. E | 3.3 | Ω² a. p. |
| 13 | 59.08 | 26.1 | 29 | 23.3 | 88.5 | Variable | 1.7 | 5.3 | Ci.-S. | Cu.-N. E | 11.2 | ●° a. |
| 14 | 59.33 | 26.4 | 29.4 | 23 | 85.5 | E quad. | 1 | 6 | Ci., A.-Cu. NE, SE | Cu. E | ------ | Ω² a. ∞ p. |
| 15 | 58.44 | 26 | 29.2 | 23.1 | 86.8 | N quad. | .7 | 3.8 | Ci.-S., A.-Cu. NE, SE | Cu. E | 3.6 | Ω² a. ∞ p. |
| 16 | 58.43 | 26.3 | 29.2 | 23.2 | 87 | NW | .8 | 4.7 | A.-Cu. SE | Cu.-N. E | 5.3 | Ω²●° a. |
| 17 | 59.02 | 24.9 | 28.4 | 23.3 | 93.3 | Variable | 1 | 9.3 | A.-Cu. | Cu.-N. E | 17.4 | Ω² a. ●° a. p. |
| 18 | 59.29 | 25.5 | 30.1 | 22.7 | 91.2 | E quad. | 1.8 | 6.3 | Ci.-S. SE | Cu.-N. | 4.1 | Ω² ●° a. ↙° p. |
| 19 | 59.03 | 26.2 | 29 | 23.1 | 89.3 | Variable | 1.2 | 7 | A.-Cu. SE | Cu.-N. E | 6.1 | ●° a. |
| 20 | 59.66 | 26.2 | 29.5 | 23.3 | 89.3 | SW | 1.3 | 6.8 | Ci. NE | Cu., Cu.-N. E | 21.1 | ●° a. p. |
| 21 | 59.17 | 26.2 | 30.1 | 23.8 | 89.3 | E quad. | 1.3 | 8.2 | Ci. | Cu.-N. E | 7.6 | ●° a. p. ‹° p. |
| 22 | 58.80 | 25.8 | 29.8 | 22 | 86 | E quad. | 1 | 4.3 | Ci. SE | Cu. E | ------ | |
| 23 | 57.76 | 25.2 | 28.7 | 22.1 | 89 | Variable | 1 | 6.8 | Ci.-S. E | Cu.-N. NE | 6.4 | Ω² ●° a. |
| 24 | 56.89 | 25.6 | 29.3 | 22 | 88.5 | N quad. | 1.3 | 8.3 | A.-Cu.,Ci.-S. SE, NE | Cu.-N. E | 17.8 | ●° a. p. |
| 25 | 57.70 | 25.7 | 29.2 | 22.9 | 89.5 | NE quad. | 1.2 | 7.5 | A.-Cu. NW | Cu.-N. ENE | 22.9 | ●° a. |
| 26 | 57.35 | 25.7 | 29.6 | 23.1 | 89.2 | E quad. | 1.3 | 7 | A.-Cu. NW | Cu.-N. NE | 2.3 | ●² a. Ω² p. |
| 27 | 56.98 | 26.2 | 29.9 | 22.7 | 86.2 | ENE | .8 | 4 | Ci. NE | Cu. E | ------ | Ω² a. ∞ ‹° p. |
| 28 | 56.87 | 26.4 | 30.3 | 22.7 | 86.3 | E quad. | 1 | 3.2 | Ci. NE | Cu., Cu.-N. E | 4.3 | Ω² a. ∞ ‹° p. |
| 29 | 57.29 | 26.8 | 30.6 | 23.2 | 84.3 | ENE, NE | .7 | 4.5 | Ci.-S. NE | Cu. E | ------ | ●° a. ∞ p. |
| 30 | 57.49 | 26.4 | 30 | 23.4 | 86.7 | E quad. | 1.2 | 7.3 | Ci.-S. NE | Cu., Cu.-N. E | 6.3 | Ω² a. ● p. |
| 31 | 57.66 | 26.8 | 30.4 | 23.6 | 85.8 | ENE | 1.8 | 6 | Ci., Ci.-S. NE | Cu. E | ------ | ∞ p. |
| Mean | 758.63 | 25.9 | 29.3 | 22.9 | 88.1 | ------ | 1.3 | 6.5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 249.1 | |

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[1] All the mean values given in these tables are deduced from six daily observations.
[2] Deduced from five observations only.

## METEOROLOGICAL DATA, ETC.—Continued.

### CEBU.

[$\phi$=10° 18′ N ; $\lambda$=123° 54′ E ; barometer above sea, 4.5 meters ; **gravity correction not applied, —1.84 mm.]**

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km.p.h.* | *0–10.* | | | *mm.* | |
| 1 | 760.02 | 25.7 | 29 | 22.8 | 78.5 | NE quad. | 7.6 | 5.8 | Ci.-S. | Cu. ENE | ------ | ≡ Ω a. |
| 2 | 59.78 | 25.7 | 29.3 | 22.2 | 75 | NE quad. | 9.7 | 3.3 | Ci. | Cu. ENE | ------ | ≡ a. Ω a. p. |
| 3 | 60.32 | 25.5 | 29.7 | 22.1 | 73.8 | NE | 7 | 4.7 | Ci.-S. | Cu. ENE | ------ | Ω a. |
| 4 | 60.40 | 26.2 | 29 | 23.4 | 77.3 | NE quad. | 7.7 | 4.3 | Ci.-S. | Cu. NE | ------ | Ω a. |
| 5 | 60.47 | 25.7 | 30.1 | 22 | 78.7 | E | 8.2 | 3.2 | Ci., Ci.-S. | Cu. ENE | ------ | ≡ Ω a. |
| 6 | 59.81 | 26.2 | 30.5 | 21.8 | 81.2 | NE | 8.6 | 5.8 | Ci.-S., A.-Cu. | Cu., Cu.-N. NE | 28.2 | ≡ Ω² a. ● Γζ p. |
| 7 | 59.96 | 26.1 | 29.8 | 23.2 | 82.3 | NE quad. | 9.3 | 7.8 | Ci., Ci.-S. | Cu.-N. NE, ENE | 4.3 | ≡ a. ● Γζ a. p. |
| 8 | 59.40 | 26.2 | 28.8 | 23.6 | 80 | NE quad. | 11 | 6.3 | Ci.-S. | Cu., Cu.-N. NE | ------ | ● a. ⊕ p. |
| 9 | 58.42 | 26.5 | 30.8 | 23.9 | 78.2 | NE quad. | 7.4 | 4.2 | Ci., Ci.-S. | Cu., S.-Cu. ENE | ------ | Ω² a. |
| 10 | 57.38 | 26 | 29.6 | 22.7 | 78.7 | NE quad. | 8.4 | 3.8 | Ci. | Cu. ENE | ------ | Ω² ◯ a. |
| 11 | 57.42 | 25.4 | 29 | 22 | 76 | E | 8 | 2.3 | Ci. | Cu. ENE | ------ | Ω a. p. |
| 12 | 57.88 | 25.9 | 29.7 | 21.6 | 78.5 | E quad. | 7.7 | 2.5 | Ci. | Cu. ENE | ------ | Ω a. < p. |
| 13 | 58.97 | 25.8 | 29.5 | 21.9 | 80.3 | E | 8.6 | 4.2 | Ci. | Cu., Cu.-N. NE quad. | ------ | ≡ Ω a. < ⊕ p. |
| 14 | 59.30 | 26.2 | 29.6 | 23.1 | 76.7 | NE quad. | 8.3 | 3.8 | Ci. | Cu. ENE | 7.6 | Ω ●° a. |
| 15 | 58.44 | 26.1 | 30.7 | 21.5 | 76.5 | E quad. | 6.3 | 2.7 | Ci. | Cu. ENE | ------ | ≡ Ω a. ∞ p. |
| 16 | 58.19 | 26 | 30.5 | 22 | 77 | N | 8.4 | 3 | Ci. | Cu. ENE, N | ------ | ≡ a. d p. |
| 17 | 58.84 | 26.3 | 29.5 | 22.9 | 75.5 | NE quad. | 10 | 2.7 | Ci. | Cu. NE | .8 | Ω a. p. < p. |
| 18 | 59.18 | 26.4 | 29.6 | 23.1 | 78.3 | NE quad. | 7.2 | 5.8 | Ci.-S. | Cu., Cu.-N. NE | ------ | d ⌒ a. < p. |
| 19 | 58.89 | 26.3 | 30 | 22.2 | 76.7 | ENE | 8.8 | 2.8 | Ci. | Cu. NE | 27.2 | Ω a. |
| 20 | 59.42 | 26.2 | 29.6 | 23 | 79.3 | NE | 9 | 5.5 | Ci.-S. | Cu. NE | ------ | ●² ◯ a. |
| 21 | 59.15 | 26.9 | 30.4 | 23.4 | 75.2 | NE | 10 | 3.8 | Ci., Ci.-S. | S.-Cu. NE | ------ | Ω ⊍ a. < p. |
| 22 | 58.82 | 26.4 | 29.3 | 23.8 | 75.2 | N, E | 9.4 | 3 | Ci. | Cu. NE | ------ | Ω a. < p. |
| 23 | 57.67 | 26.1 | 29.8 | 21.9 | 73.8 | E quad. | 8.9 | 3.7 | Ci. | Cu. NE | ------ | Ω a. Γζ° p. |
| 24 | 56.89 | 26 | 29.6 | 22.5 | 72.8 | NE quad. | 8.1 | 2.7 | Ci. | Cu. NE | ------ | Ω a.∞ Γζ p. |
| 25 | 57.69 | 26.4 | 29.3 | 23 | 76 | NE | 8.9 | 4.5 | Ci. | Cu. NE | ------ | Ω Γζ° a. ∞ p. |
| 26 | 57.26 | 26.5 | 30 | 23.7 | 74.8 | NE quad. | 9.9 | 2.7 | Ci. | Cu. ENE | ------ | Ω a. |
| 27 | 56.74 | 27.2 | 30.6 | 23.9 | 75.7 | NE quad. | 7.7 | 3.3 | Ci., Ci.-S. | Cu. E quad. | ------ | ≡ Ω a. < p. |
| 28 | 56.68 | 26.8 | 30.5 | 23.6 | 75.7 | E, SE | 7.3 | 2.7 | Ci. | Cu. ENE | ------ | ≡ a. < p. |
| 29 | 57.14 | 26.8 | 30.4 | 23.8 | 75.2 | E | 8.6 | 3.2 | Ci. | Cu. ENE | ------ | ≡ Ω a. |
| 30 | 57.49 | 26.4 | 30.3 | 22.2 | 71.7 | E | --------- | 3.3 | Ci. | Cu. ENE | ------ | Ω a. < p. |
| 31 | 57.59 | 26.9 | 30 | 23.7 | 75.2 | NE, E | 9 | 4.2 | A.-Cu. | Cu., Cu.-N. ENE | ------ | Ω d° a. ∞ < p. |
| Mean | 758.57 | 26.2 | 29.8 | 22.8 | 76.8 | ------------- | 8.5 | 3.9 | ------------------- | ------------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------- | --------- | --------- | ------------------- | ------------------- | 68.1 | |

### ILOILO.

[$\phi$=10° 42′ N ; $\lambda$=122° 34′ E ; barometer above sea, 6 meters ; **gravity correction not applied, —1.84 mm.]**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km.p.h.* | *0–10.* | | | *mm.* | |
| 1 | 760.47 | 25.2 | 29.7 | 22.3 | 83.5 | N | 13.2 | 4.8 | Ci.-S. | Cu. | 0.3 | Ω ≡ a. ● p. |
| 2 | 60.11 | 25.1 | 29.5 | 22.1 | 77.5 | NE quad. | 14.9 | 3.2 | Ci. | Cu. NE | ------ | Ω a. |
| 3 | 60.64 | 24.6 | 29.5 | 21.4 | 77 | NE quad. | 13.9 | 4.5 | Ci.-S., Ci. | Cu. NE, N | ------ | Ω² a. ≡° p. |
| 4 | 60.66 | 25.6 | 30.1 | 22.5 | 81.2 | NE quad. | 11.5 | 6.3 | Ci.-S., A.-Cu. | Cu. NE | .5 | Ω ≡ a. d ● < p. |
| 5 | 60.77 | 26.5 | 31.5 | 22.5 | 76.2 | NE quad. | 10.1 | 4.3 | Ci. | Cu. | ------ | Ω a. |
| 6 | 60.18 | 26.4 | 31 | 22.9 | 79.3 | NE quad. | 12.3 | 6.2 | Ci. | Cu. NE | ------ | Ω a. d ⌒ < p. |
| 7 | 60.31 | 26.1 | 30.5 | 23 | 81.5 | NE | 16.4 | 8.8 | Ci.-S. | Cu. NE | 6.1 | ≡ a. d ● p. |
| 8 | 60.12 | 24.7 | 28.8 | 22.4 | 85.7 | NE | 15 | 9.2 | Ci.-S. | Cu. | .3 | ≡ a. p. d ● p. |
| 9 | 58.62 | 26.6 | 31.4 | 23.7 | 78.3 | NE quad. | 11.7 | 6.7 | Ci. | Cu. NE | ------ | d a. ≡ p. |
| 10 | 57.36 | 26.9 | 31.1 | 23.4 | 77.8 | NE quad. | 11.2 | 2 | Ci. E | Cu. | ------ | Ω ≡ a. |
| 11 | 57.48 | 26.1 | 31.5 | 21.9 | 77.2 | NE | 9.6 | 1.2 | Ci. | Cu. | ------ | Ω a. |
| 12 | 58.23 | 25.8 | 31.5 | 21.3 | 76.5 | NE quad. | 10.5 | 2.5 | Ci. | Cu. N | ------ | Ω a. |
| 13 | 59.27 | 26.3 | 31.9 | 21.8 | 77.3 | NE quad. | 12.4 | 2.3 | Ci. | Cu. N | ------ | Ω ≡ a. |
| 14 | 59.42 | 26.9 | 31.4 | 23.8 | 78.3 | NE quad. | 11.7 | 5.7 | Ci. | Cu. | ------ | ⊤ p. |
| 15 | 58.55 | 27 | 31.4 | 23.2 | 78.2 | NE quad. | 9.3 | 4.3 | Ci. | Cu. | ------ | Ω a. |
| 16 | 58.66 | 26.8 | 31.5 | 22.9 | 79.5 | NE | 13.4 | 5 | Ci. | Cu. NE | ------ | Ω a. |
| 17 | 59.12 | 26.8 | 31.6 | 23.4 | 73.5 | NE quad. | 13.7 | 3.8 | Ci. | Cu. | ------ | Ω ≡ a. < ⊤ p. |
| 18 | 59.44 | 26.6 | 31 | 23 | 77.8 | NE quad. | 12.8 | 5.8 | Ci. | Cu. NE | ------ | |
| 19 | 59.21 | 26.2 | 30.5 | 23.4 | 80.3 | NE quad. | 14.3 | 3.5 | A.-Cu. E | Cu. | ------ | ≡ a. p. < p. |
| 20 | 59.74 | 26 | 30.5 | 23.4 | 79.2 | NE | 14.6 | 5.7 | Ci. | Cu. NE | ------ | d ⌒ a. |
| 21 | 59.36 | 26.3 | 31.4 | 22.9 | 79.3 | NE quad. | 14.5 | 6 | Ci.-S. E | Cu. NE | ------ | Ω ≡ a. < p. |
| 22 | 58.97 | 26.4 | 31 | 23.7 | 78.2 | NE quad. | 12.4 | 4 | Ci. | Cu. NE | .5 | d ● a. < p. |
| 23 | 57.89 | 26.2 | 30.5 | 23 | 78.2 | NE | 14.1 | 4.5 | Ci. S. SSW | Cu. NE | ------ | Ω° ≡ a. < p. |
| 24 | 57.12 | 26 | 30.6 | 22.8 | 76.5 | NE quad. | 14.4 | 4 | Ci. | Cu. | ------ | Ω² a. < p. |
| 25 | 57.74 | 26.1 | 31.9 | 22.3 | 76.8 | NE quad. | 13.5 | 3.5 | Ci. | Cu. NE | ------ | Ω² a. < p. |
| 26 | 57.26 | 27 | 32.2 | 23.4 | 72.5 | NE quad. | 12.7 | 3.3 | Ci. | Cu. NE | ------ | ≡ a. |
| 27 | 56.93 | 26.8 | 33 | 23 | 76.7 | NE quad. | 8.6 | 5.3 | Ci. | Cu. | .3 | ⊤ < Γζ ● p. |
| 28 | 56.67 | 26.8 | 32.5 | 22.6 | 77.8 | NE quad. | 9.5 | 4.8 | Ci. | Cu. NE | ------ | |
| 29 | 57.09 | 26.9 | 32 | 23.3 | 76.5 | NE | 12.4 | 4.2 | Ci. | Cu. NE | ------ | ≡° a. |
| 30 | 57.52 | 26.6 | 32 | 22.9 | 75.7 | E | 10.2 | 2.8 | Ci. | Cu. | ------ | |
| 31 | 57.50 | 27 | 32.1 | 22.4 | 69.2 | NE | 11.4 | 4.5 | A.-Cu. E | Cu. | ------ | |
| Mean | 758.79 | 26.3 | 31.1 | 22.8 | 77.8 | ------------- | 12.5 | 4.6 | ------------------- | ------------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------- | --------- | --------- | ------------------- | ------------------- | 8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ORMOC.

[φ=11° 00′ N; λ=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | | | mm. | |
| 1 | 760.19 | 25.1 | 30.4 | 21.9 | 78.8 | N quad. | 6.1 | 7.8 | Ci.-S. | | Cu.-N. | | ------ | ∞ a. |
| 2 | 59.92 | 24.2 | 30.4 | 19.4 | 78.7 | NE quad. | 4.9 | 6.2 | Ci. | | Cu.-N. | | ------ | Ω ≡° a. |
| 3 | 60.48 | 23.6 | 29 | 17.7 | 83.8 | N quad. | 4.4 | 7.2 | Ci.-S. | E | Cu.-N. | | ------ | Ω ≡° a. |
| 4 | 60.54 | 25.4 | 30 | 22.2 | 80.5 | NW quad. | 5.4 | 7.7 | Ci.-S. | | Cu.-N. | E | 1.5 | Ω² ≡° p a. ⊕ p. |
| 5 | 60.70 | 24.7 | 31.5 | 20 | 85.7 | NW, N | 5.6 | 6.5 | Ci. | E | Cu.-N. | E | ------ | Ω ≡° a. ⊕ p. |
| 6 | 60.02 | 25.2 | 28.6 | 22.2 | 92.5 | N quad. | 4.3 | 8 | A.-Cu. | E | Cu.-N. | NE | 16.3 | ≡° a. < p. d T |
| 7 | 60.14 | 24.6 | 28 | 23.2 | 93.7 | N quad. | 5.5 | 9.7 | Ci.-S. | | Cu.-N. | E | 33.8 | ≡° a. T d < p. |
| 8 | 59.69 | 25.1 | 29 | 22.7 | 87.5 | N quad. | 5.4 | 9.5 | Ci.-S. | | Cu.-N. | | .3 | d ● ≡° a. |
| 9 | 58.48 | 25.8 | 31.1 | 21.7 | 83 | Variable | 6.3 | 6.5 | A.-Cu. | E | Cu. | E | ------ | Ω ≡° p ⌒² a. |
| 10 | 57.58 | 24.9 | 31 | 20.7 | 81.7 | Variable | 6.9 | 5 | Ci. | | Cu.-N. | ENE | ------ | Ω ≡° a. |
| 11 | 57.60 | 24.6 | 31 | 18.5 | 82.3 | Variable | 5.9 | 3.5 | Ci. | | Cu.-N. | E | ------ | Ω ≡° a. |
| 12 | 58.05 | 24.9 | 30.8 | 20.5 | 83.5 | N quad | 5.5 | 3.7 | Ci., Ci.-S. | | Cu. | | ------ | Ω ≡° a. T° p. |
| 13 | 59.25 | 23.8 | 29 | 21 | 92.3 | NE quad. | 4.3 | 5.2 | Ci.-S. | | Cu.-N. | | 14.8 | Ω ≡° d a. T ● p. |
| 14 | 59.55 | 24.8 | 29.2 | 21.5 | 85.2 | N quad. | 5.8 | 6.2 | Ci.-S. | | Cu.-N. | | .8 | p Ω ≡° a. |
| 15 | 58.66 | 24.7 | 30.7 | 19.6 | 84.3 | NW quad. | 5.2 | 3 | Ci. | | Cu. | | ------ | Ω ≡° a. |
| 16 | 58.58 | 24.1 | 29.2 | 20.6 | 88.8 | NE, NW | 4.8 | 4.5 | Ci. | | Cu.,Cu.-N. | | 4.3 | Ω ≡° a. ● T < p. |
| 17 | 59.12 | 25.9 | 30.5 | 21.8 | 82.2 | N | 6.3 | 5 | Ci.-S. | | Cu.-N. | E | ------ | Ω ≡° a. < p. |
| 18 | 59.48 | 25.2 | 29.7 | 23 | 87 | N quad. | 5.2 | 6.3 | Ci.-S. | | Cu.-N. | E | ------ | Ω ≡° a. < p. |
| 19 | 59.18 | 25.5 | 31 | 20.8 | 84.5 | N | 5.5 | 4.5 | Ci. | | Cu.-N. | E | .5 | Ω ≡° a. < p p. |
| 20 | 59.81 | 25.3 | 30.7 | 21.3 | 87.7 | N | 4.9 | 5.8 | Ci.-S. | SE | Cu.-N. | ENE | 1.8 | Ω ≡° a. p < p. |
| 21 | 59.37 | 25.2 | 30.2 | 21 | 90.7 | NW quad. | 6.9 | 6.5 | Ci. | | Cu.-N. | E | 6.9 | Ω ≡° a. T d p p. |
| 22 | 59.07 | 25.4 | 30.9 | 21 | 88.3 | N | 6.5 | 4.2 | Ci. | | Cu. | E | ------ | Ω ≡° a. |
| 23 | 57.85 | 25 | 31 | 19.9 | 85.3 | NW quad. | 5.7 | 4 | Ci. | | Cu. | NE | ------ | Ω ≡° a. T < p. |
| 24 | 57.06 | 25.6 | 31 | 19.9 | 82 | N quad. | 6.4 | 3.2 | Ci. | | Cu. | NEbyE | 1 | Ω ≡° a. < T p. |
| 25 | 57.97 | 25.4 | 29.6 | 22.6 | 85.5 | Variable | 5.8 | 7.3 | Ci.-S. | E | Cu. | E | 1.8 | ≡° d a. < p. |
| 26 | 57.44 | 25.1 | 30 | 20.6 | 84.3 | Variable | 6.4 | 4.8 | Ci. | | Cu.-N., Cu. | E | ------ | Ω ≡° a. < p. |
| 27 | 57.04 | 25.8 | 31.8 | 20.9 | 85.5 | NE quad. | 5.9 | 5.3 | Ci.-S. | | Cu.-N. | NW | ------ | Ω a. Γ° < p. |
| 28 | 56.98 | 25.6 | 30.8 | 20.6 | 85.2 | N | 5.1 | 3.8 | Ci. | | Cu. | E | ------ | Ω ≡° a. Γ < p. |
| 29 | 57.29 | 25.8 | 30.5 | 20.9 | 82.3 | SW | 5.7 | 4.3 | Ci. | | Cu. | E | 1.8 | Ω ≡ p a. |
| 30 | 57.69 | 24.7 | 30.6 | 18.5 | 84 | NW quad. | 6.2 | 3.3 | Ci. | | Cu.-N. | | ------ | Ω ≡° a. < p. |
| 31 | 57.60 | 25.8 | 30.8 | 21.1 | 82.3 | Variable | 6.5 | 6.2 | A.-Cu. | E | Cu.-N. | E | ------ | Ω ≡° a. < p. |
| Mean | 758.79 | 25.1 | 30.3 | 20.9 | 85.1 | ------ | 5.7 | 5.6 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 85.6 | |

### TACLOBAN.[1]

[φ=11° 15′ N; λ=125° 00′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.82 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | | | mm. | |
| 1 | 761.42 | 25.6 | 30.2 | 23.6 | 86.8 | N quad. | 1.0 | 5.8 | Ci. | SW | Cu. | ENE, E | 6.9 | ● a. p. C² a. |
| 2 | 60.98 | 25.4 | 30 | 22.3 | 80 | N quad. | 1 | 4.8 | Ci. | SW | Cu. | NE | ------ | Ω² a. |
| 3 | 61.46 | 25 | 28 | 22 | 85 | N, NNW | .8 | 7 | Ci., Ci.-S. | SW | Cu.-N. | NE | .5 | Ω² a. |
| 4 | 61.71 | 26.1 | 32 | 23.3 | 83.7 | NE quad. | .8 | 7 | Ci.-S. | SW | Cu.-N. | NE, ENE | 1 | ● a. p. |
| 5 | 61.52 | 26.6 | 32.2 | 23.1 | 81 | N quad. | .8 | 5.8 | Ci.-S. | SW | Cu. | E, ENE | ------ | Ω a. |
| 6 | 60.82 | 26 | 30.4 | 24 | 88.5 | NW | 1 | 8.2 | Ci.-S. | | Cu.-N. | NE | 19 | ● a. p. T p. |
| 7 | 61.26 | 25.6 | 31.3 | 24 | 90.3 | N quad. | .7 | 8.8 | Ci.-S. | S | Cu.-N. | ENE | 31.1 | ● a. p. ⌒ a. |
| 8 | 61.11 | 25.2 | 29 | 23 | 88.5 | NNE, N | .5 | 8.5 | Ci., Ci.-S. | | N., Cu.-N. | NE | 5.1 | ● a. p. |
| 9 | 59.59 | 26.6 | 31.3 | 23.3 | 85.7 | SW quad. | .3 | 6 | Ci. | SW | Cu. | E | ------ | ⊎² ⊕² p. |
| 10 | 58.41 | 26.5 | 31.6 | 23.5 | 84.7 | NW quad. | .8 | 4.3 | Ci. | SW | Cu. | E | ------ | Ω² ≡ a. |
| 11 | 58.42 | 26.5 | 32.2 | 22.7 | 81.8 | W quad. | .3 | 2.8 | Ci.-S. | | S.-Cu. | | ------ | Ω² a. d p. |
| 12 | 59.02 | 26.5 | 31.8 | 23.3 | 85.5 | NW quad. | .5 | 6.7 | Ci.-S. | SW | Cu., Cu.-N. | E | ------ | Γ p. |
| 13 | 60.22 | 25.6 | 31.4 | 23.4 | 88.3 | NW quad. | .8 | 7.3 | Ci.-S. | W | Variable | NE | 5.6 | ● a. p. T p. |
| 14 | 60.44 | 26.6 | 31.8 | 23.3 | 85.7 | S | .7 | 6.5 | Ci.-S. | SW | Cu., Cu.-N. | ENE | ------ | |
| 15 | 59.37 | 26.8 | 32.3 | 23.2 | 83.8 | SE | .5 | 4.8 | Ci. | SW | Cu. | ENE | ------ | Ω a. |
| 16 | 59.46 | 26.6 | 31.5 | 23.3 | 82.2 | NE | 1 | 4.8 | Ci.-S. | S | Cu. | NE, NNW | ------ | Ω² a. |
| 17 | 60.04 | 27.1 | 32 3 | 23.5 | 79.2 | S quad. | 1 | 4.3 | Ci.-Cu., Ci.-S. | | Fr.-Cu. | ENE | ------ | Ω² d a. |
| 18 | 60.71 | 25.3 | 28.4 | 24 | 89.7 | N | .5 | 8 | Ci.-S. | | Cu.-N. | NE | 2.3 | d a. p. ●° p. |
| 19 | 60.12 | 26.9 | 31.8 | 23.5 | 84.2 | W | .8 | 6.5 | ------ | | Cu.-N. | NNE, ENE | ------ | ⊎² ●⌒° a. |
| 20 | 61.02 | 25.3 | 29 | 24 | 88 | N | 1.2 | 7 | Ci.-Cu. | SW | Cu.-N. | NE. ENE | 4.9 | ● ⌒² p. |
| 21 | 60.33 | 26.4 | 32.4 | 23.3 | 85 | NW quad. | .7 | 6.5 | Ci.-S. | SW | Fr.-Cu. | ENE | 1.5 | Ω² a. ● p. |
| 22 | 60.16 | 26.4 | 32 | 23.7 | 84.3 | NNW | .8 | 5.2 | Ci.-S. | SWbyW | Cu. | E | ------ | ⊕² Ω ≡° a. |
| 23 | 58.88 | 25.9 | 32.7 | 23 | 84.2 | N | .5 | 4.7 | Ci.-S. | | Fr.-Cu., Cu. | NE | .8 | Ω a. ●° < p. |
| 24 | 58.16 | 26.9 | 33.3 | 22.7 | 76.5 | N | .7 | 5.8 | Ci.-S. | | Cu., Cu.-N. | ENE | 1.3 | Ω a. |
| 25 | 59.11 | 26.2 | 30.7 | 23 | 79.8 | NE quad. | .7 | 7.7 | Ci.-S. | | N., Cu.-N. | ENE | 1 | ● d a. |
| 26 | 58.41 | 27.1 | 31.9 | 23.3 | 81 | SE | .3 | 4.2 | Ci. | SW | Cu. | E | ------ | Ω² a. |
| 27 | 58.03 | 27.2 | 32.3 | 23.2 | 80.7 | Variable | .3 | 4.8 | Ci.-S. | WSW, W | Cu. | ESE, E | ------ | Ω² a. |
| 28 | 58.01 | 26.8 | 32.4 | 23.7 | 83.2 | Variable | .8 | 4.2 | Ci. | WSW | Cu. | ESE | 3.3 | Ω a. p. ● p. |
| 29 | 58.47 | 26.6 | 31.2 | 23 | 81.8 | Variable | .8 | 4.3 | Ci.-S. | | Cu. | E | ------ | Ω² a. p. |
| 30 | 58.70 | 26.6 | 32.2 | 22.6 | 81.5 | WNW | .7 | 3.3 | Ci. | WSW | Cu. | E | ------ | Ω² a. p. ⊕° a. |
| 31 | 58.76 | 27.5 | 32.6 | 24 | 80 | Variable | 1 | 6 | Ci. | W | Cu., Cu.-N. | ENE | ------ | Ω² p. |
| Mean | 759.81 | 26.3 | 31.4 | 23.3 | 83.9 | ------ | .7 | 5.9 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 84.3 | |

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[1] The barometric readings of this station seem to be too high.

## METEOROLOGICAL DATA, ETC.—Continued.

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 761.40 | 25 | 29.6 | 22.7 | 87.5 | NE | 9.4 | 6.7 | Ci.-S. | N. NE | 8.6 | ●° ⌒ a. ● p. |
| 2 | 61.03 | 25 | 29.9 | 22.2 | 84.3 | E quad. | 4.6 | 4.8 | Ci. | Variable NE | ------ | Ω a. d° p. |
| 3 | 61.55 | 24.8 | 28.8 | 21.2 | 79.8 | NE, NNE | 8.3 | 6 | Ci. | Cu. NE | ------ | Ω° ⊕° ○° a. |
| 4 | 61.29 | 26.2 | 29.3 | 24 | 85.8 | NE quad. | 11.4 | 8.7 | Ci.-S. | N. NE | 1.1 | ●° a. p. |
| 5 | 61.26 | 25.9 | 29.9 | 23.3 | 87.7 | Variable | 6.7 | 4.2 | Ci. SE | Fr.-Cu., Cu. NE | ------ | Ω a. |
| 6 | 60.84 | 26.2 | 30.3 | 23.8 | 87.3 | N | 10.9 | 7.7 | Ci.-S. | N. N | 2.6 | Ω° d° a. ●° ⩽ p. |
| 7 | 61.06 | 25.4 | 29.8 | 23 | 90.5 | NE | 9.9 | 9 | Ci.-S. | N. NE | 4.7 | ⊕° ○ a. ●° a. p. |
| 8 | 61.26 | 25.6 | 27.7 | 24 | 86.2 | NE | 17.6 | 9.5 | Ci.-S. | Fr.-N. NE | ------ | d° ●° a. Φ° p. |
| 9 | 59.16 | 26.3 | 29.7 | 24.3 | 88.5 | NNE | 12.8 | 7.7 | Ci.-S. N | N., N.-cf. N, NE | 2.8 | ● a. Φ° p. |
| 10 | 57.88 | 26 | 30.4 | 23.8 | 88.8 | NE quad. | 7.1 | 2.8 | Ci. | Cu. NE | 9.4 | Ω° p. |
| 11 | 57.83 | 25.6 | 30.4 | 22.8 | 88 | N quad. | --------- | 4.7 | Ci. | N.-cf. N | ------ | ● a. |
| 12 | 58.72 | 25.3 | 29.9 | 21.5 | 87.3 | N | --------- | 5.5 | A.-Cu. N | Cu. N | ------ | Ω² a. |
| 13 | 59.91 | 26 | 30.2 | 22.9 | 86.5 | NE quad. | 8.7 | 7.8 | Ci., C.-S. | Cu., N. N, NE | 7.2 | ⊕ a. ● p. |
| 14 | 60.04 | 26.3 | 30.2 | 23.5 | 85.7 | NE quad. | 8.5 | 7.2 | Ci.-S. | Variable E | .8 | ●° Φ p. |
| 15 | 59.08 | 26.5 | 30.3 | 24.1 | 85.8 | N quad. | 9.9 | 7.2 | Ci.-S. | N. NE quad. | ------ | ⛈° a. d° p. |
| 16 | 59.30 | 26.5 | 30.3 | 24.8 | 83.3 | N | 14.7 | 6.8 | Ci.-S. | Cu. N, NE | ------ | d° a. |
| 17 | 59.67 | 26.5 | 30.7 | 23.9 | 82 | NE quad. | 5.8 | 6.2 | Ci., C.-S. | N. NE, E | .3 | ⩽ d p. |
| 18 | 60.06 | 26.8 | 30.2 | 25.4 | 81.7 | NNE | 10.1 | 7.3 | Ci.-S. | Variable NE | .8 | ●° a. p. Φ p. |
| 19 | 59.87 | 26.3 | 30.3 | 25.2 | 82.8 | NE quad. | 14.8 | 7.8 | Ci.-S. | N. NE | 2 | ●° a. p. ⌒ ⊤° ⩽ p. |
| 20 | 60.41 | 26.4 | 30.4 | 24.5 | 80 | NNE | 10.5 | 7.5 | Ci.-S. | N. N, E | ------ | d° ⊤° p. |
| 21 | 60.15 | 26.4 | 30.2 | 24.8 | 80.8 | NE quad. | 12.6 | 6.5 | Ci.-S. | Cu. NE | 6.6 | ⩽ p. |
| 22 | 60.03 | 26.2 | 29.8 | 24 | 82.5 | NNE | 11.2 | 5.8 | Ci.-S. NE | Cu., Fr.-N. NE | ------ | ● a. ⩽° p. |
| 23 | 58.56 | 26.5 | 30.1 | 23.4 | 80.7 | NE | 11.4 | 4.3 | Ci. | Cu., Cu.-N. NE | ------ | d° a. ⛈ p. |
| 24 | 57.79 | 26.2 | 30.4 | 23.2 | 83.5 | NE quad. | 9.6 | 5.2 | Ci. | Variable NE | ------ | ⩽ p. |
| 25 | 58.42 | 25.8 | 30.5 | 23 | 82.8 | NE quad. | 9.4 | 4.7 | Ci. | Cu.-N. NE | ------ | Ω° a. ⩽ p. |
| 26 | 57.88 | 26.2 | 30.5 | 24.5 | 84.7 | NE | 7.4 | 4.8 | Ci. | Cu. E, NE | ------ | |
| 27 | 57.39 | 26.3 | 30.6 | 23.5 | 86.7 | N | 4.7 | 3.8 | Ci.-S. NE | N. NE | ------ | Ω² a. ⩽ p. |
| 28 | 57.13 | 26.4 | 30.9 | 23 | 84 | Variable | 4.8 | 3.5 | Ci. | Cu. NE | ------ | Ω² a. |
| 29 | 57.72 | 26.4 | 31.1 | 23.8 | 84 | NE | 6.3 | 4.5 | Ci. | Cu., Fr.-Cu. E | ------ | Ω° a. |
| 30 | 58.10 | 26.2 | 31.5 | 23 | 82.5 | NE quad. | 5.4 | 5.5 | Ci. | Fr.-N., Fr.-Cu. E | 1.5 | ●° a. |
| 31 | 57.99 | 25.8 | 32 | 22.2 | 85 | Variable | 4.5 | 3.7 | Ci. | Fr.-N., N.-cf. E, NE | ------ | Ω² a. |
| Mean | 759.44 | 26 | 30.2 | 23.5 | 84.7 | ------------ | 9.3 | 6 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------ | ------------ | 48.4 | |

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 760.80 | 24.3 | 30.1 | 21 | 86 | NE quad. | 1.3 | 5.5 | Ci.-S. | S.-Cu. NE | ------ | |
| 2 | 60.30 | 24 | 30.7 | 19.3 | 82.2 | NE quad. | 1.3 | 3.8 | Ci. | S.-cf. NE | ------ | Ω ≡° a. |
| 3 | 60.77 | 24.2 | 31.2 | 18.8 | 85.7 | NE quad. | 1.2 | 6.3 | Ci.-S. SEbyS | S.-Cu. NE | 3.6 | Ω ≡° a. |
| 4 | 60.84 | 25.2 | 30 | 22.7 | 89.7 | NE | 1.2 | 6 | A.-Cu. ENE | S.-Cu. ENE | 3.8 | ●° a. d° p. |
| 5 | 60.81 | 26 | 31.6 | 22 | 85.2 | NE | 1.2 | 3.7 | Ci. | S.-Cu. ENE | ------ | |
| 6 | 60.25 | 25.2 | 30.5 | 22.6 | 90.2 | NE | 1.2 | 5.3 | Ci.-S. | S.-Cu. NE | 8.4 | Ω a. p° ⊤° ● ⩽ p. |
| 7 | 60.69 | 24.5 | 28.1 | 22.6 | 91.8 | NE | 1.3 | 7.5 | Ci.-S. SE | S.-Cu. NE | 14.3 | ●° d° p. |
| 8 | 60.58 | 24.2 | 28.9 | 21.9 | 90.8 | NE | 1.2 | 8.3 | Ci.-S. | S.-Cu. NE | 13 | ●° a. d Φ p. |
| 9 | 58.79 | 26 | 31.2 | 22.6 | 86.7 | NNE | 1.2 | 5.5 | Ci.-S. | Cu. E | ------ | ●° a. Φ p. |
| 10 | 57.54 | 25.6 | 31.7 | 21.3 | 86.2 | N | 1.2 | 3.2 | Ci. | Cu. E | ------ | Ω a. |
| 11 | 57.79 | 25.3 | 31.3 | 20.2 | 84.5 | N | 1.2 | 2.7 | ------------ | S.-Cu. ENE | ------ | Ω² a. Φ p. |
| 12 | 58.37 | 25.1 | 30.2 | 22 | 89.2 | NE | 1.2 | 4.2 | Ci.-S. | Cu. NNE | 12.7 | Ω² a. ● ⊤° Φ p. |
| 13 | 59.60 | 24.4 | 29.7 | 22.7 | 92.3 | NE | 1.2 | 8.5 | A.-Cu. | S.-Cu. NE | 40.6 | ● a. p. ⩽ ⛈ Φ p. |
| 14 | 59.73 | 25.3 | 30.5 | 22.1 | 88.8 | NE quad. | 1.2 | 5.2 | Ci.-S. NbyW | Cu.-N. NE | 1.8 | Ω² a. d ⌒ ⛈ p. Φ |
| 15 | 58.73 | 25.8 | 30.9 | 21.7 | 85.8 | NE | 1.3 | 4.2 | Ci. SWbyS | Cu. | ------ | Ω² a. Φ p. |
| 16 | 58.95 | 24.8 | 29.1 | 22.3 | 91.3 | NE quad. | 1.3 | 6.7 | A.-Cu. E | S.-Cu. NE | 2.5 | Φ ●° a. Φ p. |
| 17 | 59.41 | 25.7 | 31.7 | 21.5 | 87 | NE | 1.3 | 5.7 | Ci.-S. | S.-Cu. NE, ENE | 12.2 | d a. ● ψ ⩽ p. |
| 18 | 59.79 | 25.7 | 31.4 | 22.7 | 86.3 | NE quad. | 1.3 | 6.2 | A.-Cu. SE | S.-Cu. ENE | 14 | Φ a. ● ⩽ p. |
| 19 | 59.52 | 25.5 | 31.7 | 22.3 | 86.8 | NE quad. | 1.5 | 4.8 | A.-Cu. E | S.-Cu. ENE, NE | 7.6 | Φ ●° a. ⩽² ⊤ p. |
| 20 | 60.29 | 24.6 | 29.4 | 21.6 | 86.2 | NNE | 1.5 | 5.7 | A.-Cu. SE | S.-Cu. NE, NNE | ------ | ⩽ d a. |
| 21 | 59.79 | 24.9 | 31.2 | 21.4 | 89.2 | NE quad. | 1.2 | 7.7 | A.-Cu. | S.-Cu. NE | 14.2 | ⊤ ●° p. |
| 22 | 59.38 | 25.6 | 31.9 | 22.2 | 86.8 | N quad. | 1.2 | 6.3 | A.-Cu. SE | S.-Cu. NE | 3.8 | ●° a. p. ⩽ p. |
| 23 | 58.34 | 25.2 | 31.1 | 22.2 | 86 | NE quad. | 1.2 | 4.7 | Ci. | S.-Cu. NE | 2.3 | ● p° ⩽ p. |
| 24 | 57.52 | 25 | 31.3 | 20.4 | 84.2 | NE | 1.3 | 2.8 | Ci. | Cu. E | ------ | Ω² a. ⩽ p. |
| 25 | 58.29 | 25.2 | 30.7 | 22.6 | 86.2 | NE quad. | 1.2 | 6.2 | A.-Cu. SSE | S.-Cu. NE | 4.6 | ●° p. |
| 26 | 57.74 | 24.8 | 30.5 | 21.3 | 88 | NE | 1.2 | 3.5 | Ci. | S.-Cu. ESE | 4.8 | Ω a. ● p. |
| 27 | 57.39 | 25.3 | 30.8 | 21 | 85.7 | NE quad. | 1.2 | 3 | Ci. S, SSE | S.-Cu. ESE | ------ | Ω² a. ⩽² ⊤° p. |
| 28 | 57.18 | 25.7 | 31.7 | 21.2 | 84.3 | NE | 1.2 | 2.2 | Ci.-S. | Cu. NE | ------ | Ω a. ⩽ p. |
| 29 | 57.70 | 25.1 | 31.7 | 21.2 | 87.7 | NE | 1.2 | 2.7 | Ci. | Cu. ENE | 8.1 | p ⊤ ⌒° p. |
| 30 | 57.93 | 25.1 | 30.2 | 20.8 | 86.2 | N quad. | 1.3 | 3.7 | Ci. | S.-Cu. ENE | ------ | Ω a. ⩽ p. |
| 31 | 57.95 | 24.9 | 31.2 | 21.2 | 89.7 | NE | 1.3 | 3.5 | Ci. SSE | Cu.-N. E | 4.3 | Ω² a. ●° d° ⊤ p. |
| Mean | 759.12 | 25.1 | 30.7 | 21.6 | 87.3 | ------------ | 1.3 | 5 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------ | ------------ | 176.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 4.2 meters; gravity correction not applied, —1.77 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 761.32 | 24.6 | 27.5 | 22.5 | 89 | E quad. | 13.8 | 7.2 | Ci.-S. | Fr.-N. NE | 3.6 | d² ● a. |
| 2 | 60.67 | 25.6 | 29.5 | 23 | 78.5 | NE | 10.6 | 3.8 | Ci. | Cu. NE | ------ | ≡° a. |
| 3 | 61.30 | 25.8 | 29.8 | 22.5 | 79.3 | NE | 10.7 | 5.7 | Ci. SW | Cu. | 30.2 | ≡° a. |
| 4 | 61.47 | 24.6 | 26.8 | 22.9 | 93 | NE | 13.5 | 8.7 | Ci.-S. | N. ENE | 22.5 | ● a. p. |
| 5 | 61.27 | 25.5 | 28.8 | 22.4 | 91.3 | E quad. | 4.7 | 5.5 | A.-Cu. SE | N., Fr.-N. NE, ENE | 3.8 | ≡° a. |
| 6 | 60.90 | 26.4 | 29.5 | 22.1 | 87.5 | NE | 11.2 | 4.7 | Ci.-S., A.-Cu. | Cu.-N. NE | 2.1 | ● a. p. |
| 7 | 61.34 | 26.2 | 29.3 | 23.6 | 82.5 | NE | 18.1 | 6.2 | Ci. ESE | Cu., Cu.-N, NE, ENE | 8.9 | ●° p. |
| 8 | 61.15 | 25.6 | 28.1 | 22.6 | 89.5 | NE | 15.8 | 8 | Ci.-S. | Fr.-N., Cu. NE | 35.6 | ●² a. d² p. |
| 9 | 59.29 | 25.3 | 27.5 | 22.6 | 93.3 | NE | 6.3 | 6.5 | Ci.-S. W | N. E | 12.5 | ● a. |
| 10 | 57.96 | 25.1 | 30 | 20.6 | 90.7 | E, ESE | 3.4 | 2.2 | Ci. | Cu. ENE, NE | ------ | ≡ a. |
| 11 | 57.93 | 25.2 | 30.7 | 20.5 | 86.8 | E | 4.2 | .7 | Ci. | Cu. | ------ | ≡ a. |
| 12 | 58.68 | 24.7 | 30.6 | 18.5 | 86.2 | NE | 7.7 | 1.3 | Ci., A.-Cu. | Cu. | ------ | ≡ a. |
| 13 | 60.08 | 24.5 | 29.9 | 22 | 92.7 | NE, E | ------ | 7 | Ci-S. | Cu., Fr.-N., NE, NNE | 11.7 | ● a. p. |
| 14 | 59.98 | 26.4 | 30 | 23 | 85.6 | NE | ------ | 4.2 | Ci., A.Cu., W, SE | Cu. ENE, NE | ------ | d° a. |
| 15 | 58.75 | 25.8 | 31.5 | 21.4 | 86.7 | NE | 6 | 3 | Ci., A.-Cu. | Cu. | ------ | ≡° a. |
| 16 | 59.26 | 26.2 | 29.6 | 23.6 | 82.8 | NE | 15.3 | 2.8 | Ci.-S. | Cu.-N. NE, NNE | ------ | ≡° a. |
| 17 | 59.61 | 26.8 | 30.8 | 24 | 80.3 | NE | 9.1 | 2 | Ci.-S. | Cu. ENE | ------ | ≡° a. ⚡° p. |
| 18 | 60.06 | 26.2 | 30.9 | 21.1 | 84.5 | E quad. | 6.4 | 1.5 | A.-Cu. SE | Cu. | 4.6 | ≡ a. |
| 19 | 60.03 | 25.7 | 29.2 | 22 | 84.5 | NE | 12 | 6.8 | Ci.-S. | Fr.-N., Cu. NNE, NE | .3 | d ● ⌒ a. |
| 20 | 60.58 | 26.4 | 29 | 24.3 | 78.5 | NE | 15.1 | 4.7 | Ci. SW | Cu. NNE | ------ | d° p. |
| 21 | 60.16 | 26.2 | 29.6 | 23.2 | ·81.8 | NE | 13 | 3.7 | Ci.-S. | Cu. NE, ENE | 23.3 | ●° a. |
| ·22 | 59.82 | 25.4 | 29.5 | 21.7 | 86.5 | NE | 8.6 | 7.7 | Ci.-S. | Cu. NE | 1 | ● a. |
| 23 | 58.72 | 24.8 | 29.1 | 21.9 | 89.5 | NE quad. | 8.7 | 6.5 | Ci.-S. | Fr.-N. NE | .3 | ●° d a. |
| 24 | 57.86 | 24.8 | 29.5 | 20.1 | 88.5 | NE | 6.8 | 1.5 | Ci. | Cu. ENE | ------ | d° a. |
| 25 | 58.69 | 25.5 | 30.1 | 20.5 | 85.3 | NE | 8.2 | 4 | A.-Cu. SE | Cu.-N. NE | ------ | ≡ a. |
| 26 | 58.03 | 26.2 | 30.6 | 22.7 | 85 | NE | 6.9 | 4 | A.-Cu. SE | Cu. E | 1.5 | ≡° d° a. |
| 27 | 57.54 | 27.5 | 30.7 | 20.4 | 88.8 | E | 4.3 | 1.2 | Ci. | Cu. | ------ | ≡ a. ⚡° p. |
| 28 | 57.35 | 26.2 | 31.2 | 21.5 | 86.7 | E quad. | 6.2 | 2.7 | Ci. | Cu.-N. NE | ------ | ≡ a. |
| 29 | 57.80 | 26.8 | 30.6 | 21.6 | 85.1 | E quad. | 8.4 | 1.3 | Ci. | Cu. | 6.1 | ≡° a. |
| 30 | 58.17 | 25.9 | 29.7 | 23.1 | 92.3 | NE, E | 5.6 | 5.7 | A.-Cu. | Cu.-N., Cu. ENE, E | .8 | ● ⚡° a. d° p. |
| 31 | 58.22 | 26.7 | 31 | 22.1 | 88.2 | E | 7.9 | 2.3 | Ci. | Cu.-N. E | ------ | ------ |
| Mean | 759.48 | 25.8 | 29.7 | 22.1 | 86.5 | ------ | 9.3 | 4.3 | ------ | ------ | ------ | ------ |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 168.8 | ------ |

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 761.63 | 25.3 | 28.2 | 23.3 | 82.8 | NE | 17.2 | 7.8 | Ci. NE | S.-Cu. NE | 1.3 | ●° a. p. |
| 2 | 60.92 | 24.6 | 28 | 19.9 | 82 | NE, N | ------ | 4.5 | Ci. E | S.-Cu. NE | ------ | ⌓° a. |
| 3 | 61.70 | 24.6 | 28.2 | 19.3 | 82.5 | NE quad. | 15.5 | 6.8 | Ci. E | Cu., S. NE | 4.3 | ⌓² a. d° p. |
| 4 | 62.10 | 25 | 26.4 | 22.8 | 88.1 | NE quad. | 17.7 | 10 | Ci.-S | S.-Cu. NE | 10 | ●° a. p. |
| 5 | 61.58 | 25.8 | 27.7 | 24 | 90.2 | N | 17.8 | 7.7 | A.-Cu. NE, E | S.-Cu. NE | 3.6 | ●° a. Φ° ⚡ p. |
| 6 | 61.57 | 25.7 | 27.7 | 23.7 | 88.8 | N quad. | 24.2 | 9.7 | Ci. | S.-Cu. NE | 6 | ●° a. p. |
| 7 | 62.24 | 25.5 | 27.2 | 22.6 | 83.8 | NE | 31.9 | 7.5 | Ci. ENE | S.-Cu. NE | 2 | ● a. ↙° d° p. |
| 8 | 62.29 | 25.3 | 26.7 | 22.9 | 78.2 | NE | 40.5 | 8 | A.-Cu. ENE | S.-Cu. NE | 2.5 | ↙° a. p. d° a. d² p. |
| 9 | 59.89 | 24.8 | 26.6 | 22.6 | 90.7 | N quad. | 23.5 | 9.3 | A.-Cu. NE | S.-Cu. NE | 3.6 | ●° a. d° Φ² p. |
| 10 | 58.02 | 25.4 | 28 | 22 | 89.2 | NW | 8.1 | 3.5 | Ci. | Cu. N | ------ | Φ² ≡° p. |
| 11 | 58.18 | 25 | 27.4 | 21.1 | 88.3 | N | 11.6 | 3.7 | Ci. | S.-Cu. NE | ------ | ⌓² ≡° a. Φ² p. |
| 12 | 59.13 | 25.6 | 27.7 | 23.7 | 82.6 | NE quad. | 26.1 | 9.3 | A.-Cu. NE | S.-Cu. NE | 2.8 | d² a. ● p. |
| 13 | 60.60 | 25.2 | 27.9 | 23.4 | 84.7 | NE | 25.3 | 9 | A.-Cu. NE | S.-Cu. NE | .5 | d² a. p. Φ² p. |
| 14 | 60.54 | 25.6 | 27 | 23.7 | 86.2 | N quad. | 19.5 | 7.7 | Ci.-Cu. ENE | S.-Cu. NE | ------ | Φ° a. d° Φ² p. |
| 15 | 59.48 | 25.3 | 27 | 23.5 | 87 | N quad. | 23.9 | 6.8 | Ci.-S., Ci. | S.-Cu. NE | 1.3 | Φ° d² a. Φ² d° p. |
| 16 | 59.78 | 25.5 | 26.9 | 23.5 | 81 | N | 27 | 8.5 | A.-Cu. NE | S.-Cu. NE | 1.8 | ●° a. Φ° d° a. p. |
| 17 | 59.98 | 25.4 | 28 | 23 | 86.3 | N quad. | 17.2 | 4.2 | Ci. | Cu. NE, N | 1 | Φ² a. Φ° ●° p. |
| 18 | 60.28 | 25.5 | 28.8 | 21.1 | 82 | NW | 8.8 | 4.2 | Ci. | Cu. NE, N | ------ | d² Φ² a. |
| 19 | 60.58 | 26.2 | 28.4 | 24.2 | 78 | NE | 24.9 | 7.2 | A.-Cu. E | S.-Cu. NE | 1.3 | Φ° ● a. |
| 20 | 60.97 | 26.3 | 28.5 | 24 | 76.7 | NE | ------ | 5.3 | A.-Cu. NE | S.-Cu. NE | ------ | Φ° a. |
| 21 | 60.61 | 26.4 | 28.9 | 24 | 78.3 | NE | 20.8 | 6.3 | A.-Cu. ENE, SE | Cu. NE | ------ | d° p. |
| 22 | 60.46 | 25.4 | 27.9 | 23 | 84.8 | N | 18.9 | 7.5 | Ci. E | S.-Cu. NE | 25.2 | Φ° d² a. ●° p. |
| 23 | 59.26 | 24.9 | 27 | 22.6 | 87.3 | N | 24.3 | 9 | A.-Cu. NE | S.-Cu. NE | 13.2 | ●° a. d² p. |
| 24 | 58.65 | 24.1 | 26.2 | 21.9 | 90.8 | NE | 27.1 | 9.7 | A.-Cu. NE | N. NE | 62.4 | d² a. ● p. |
| 25 | 59.28 | 24.3 | 26.5 | 21.7 | 87.8 | NE | 24.5 | 9.7 | A.-Cu. ENE | N. NE | 1.8 | ●° a. d° p. |
| 26 | 58.47 | 25.4 | 28.1 | 22.8 | 85.7 | N | 17.3 | 9.2 | A.-Cu. NE, ENE | S.-Cu. NE | ------ | d² p. |
| 27 | 57.51 | 25.5 | 27.9 | 21.5 | 84.5 | NW | 8.6 | 3.8 | Ci. | Cu. NE | ------ | ⌓° a. ⚡ p. |
| 28 | 57.42 | 25.4 | 28.2 | 21 | 86.8 | NW quad. | ------ | 3.8 | Ci. | S.-Cu. NE | ------ | ⌓° a. ⚡ p. |
| 29 | 58.08 | 26.6 | 29.4 | 24.7 | 82.6 | NE, N | 14 | 7.8 | Ci. NE | S.-Cu. NE | ------ | ⌒² a. d° a. p. |
| 30 | 58.20 | 26.4 | 29 | 22.8 | 82.9 | N | 10.9 | 6 | Ci. NW, W | S.-Cu. NE, N | ------ | ⚡° p. |
| 31 | 58.21 | 26.5 | 28.7 | 23.3 | 85.8 | N | 11.6 | 4.3 | Ci. | S.-Cu. NE | ------ | ------ |
| Mean | 759.92 | 25.4 | 27.7 | 22.7 | 84.7 | ------ | 20 | 7 | ------ | ------ | ------ | ------ |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 144.6 | ------ |

## METEOROLOGICAL DATA, ETC.—Continued.

### PARACALE.

[$\phi=14°\ 17'$ N; $\lambda=122°\ 47'$ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 761.74 | 25.2 | 28 | 21.8 | 82 | E quad. | 10.8 | 7.2 | Ci.-S. | Cu. E | ------ | d a. |
| 2 | 61.06 | 23.9 | 29.3 | 20.1 | 86.7 | E, ENE | 5.1 | 4 | Ci. | Cu. E | ------ | ⌓ a. p. |
| 3 | 61.88 | 24.9 | 29.8 | 20.5 | 79.7 | E quad. | 8.9 | 3.8 | Ci. | Cu. E | ------ | ⌓ a. p° p. |
| 4 | 62.09 | 25.4 | 27.5 | 24 | 90.2 | E quad. | 13.7 | 7.7 | Ci.-S. | S.-Cu. E, ENE | 18.7 | ⌓° a. ● a. p. |
| 5 | 61.70 | 26.6 | 30.2 | 24.4 | 88.7 | E quad. | 7.1 | 8.5 | A.-Cu. E | Cu. E | .8 | ● d° a. |
| 6 | 61.71 | 25.9 | 29.2 | 23.4 | 89.5 | ENE | 15.6 | 10 | Ci.-S. | S.-Cu. ENE | 30.5 | d ● a. p. |
| 7 | 62.50 | 25.6 | 28.5 | 22.9 | 84.8 | E quad. | 23.1 | 10 | Ci.-S. | Cu. NE | 9.7 | ● p° a. |
| 8 | 62.39 | 25.1 | 27 | 23.4 | 84.5 | ENE, NE | 22.2 | 9.5 | Ci.-S. | S.-Cu. NE | 9.8 | d ● a. p. |
| 9 | 59.70 | 25.1 | 28.1 | 23 | 93 | NE | 7.3 | 9 | A.-Cu. E | S.-Cu. E | 18.3 | ● d a. ⌒ d ⌓ p. |
| 10 | 58.15 | 25.3 | 30.5 | 21.7 | 90 | E, NE | 3.9 | 6.8 | Ci.-S., Ci. | Cu. E | ------ | ≡° ⌓² a. ⊕° p. |
| 11 | 58.27 | 25.9 | 30.2 | 21.8 | 86.8 | NE | 6 | 5 | Ci. | Cu. NE | ------ | ⌓ a. p. ●° p. |
| 12 | 59.25 | 26.1 | 29 | 25.2 | 84.7 | NE | 19.6 | 10 | Ci.-S. | S.-Cu. NE | 9 | ●° a. p. |
| 13 | 60.70 | 25.1 | 27.5 | 23.3 | 89 | NE | 16.4 | 10 | Ci.-S. | S.-Cu. NE | 19.6 | ● a. p. |
| 14 | 60.42 | 25.2 | 29.8 | 22.2 | 89.5 | N | 6.7 | 8.2 | Ci.-S. | Cu., Cu.-N. N | .5 | ⊍ ⌓ ≡° ●° a ⊕° p. |
| 15 | 59.43 | 24.8 | 28.2 | 22.1 | 90 | N | 11.1 | 6.8 | Ci., Ci.-S. | Cu., S.-Cu. N | 3.8 | ⌓ ⊕° a. ●° a. p. |
| 16 | 59.98 | 25.5 | 29.2 | 23.8 | 82.8 | NE | 13 | 7.3 | Ci., Ci.-S. | Cu. NE quad. | 3.1 | ●° a. d a. p. ⌓ p. |
| 17 | 60.07 | 24.3 | 29.8 | 20.9 | 90 | Variable | 4.2 | 5.8 | Ci.-S. | Cu. E | ------ | ⌓² a. ⌓ p. |
| 18 | 60.51 | 24.3 | 29.5 | 21.1 | 88.3 | NE | 4.4 | 1.8 | Ci. | Cu. E | ------ | ⌓² a. ⌓ p. |
| 19 | 60.84 | 26.1 | 28.6 | 22.3 | 79.5 | NNE | 15.6 | 8.5 | Ci. | Cu. NNE | ------ | |
| 20 | 61.17 | 26.2 | 29.7 | 25 | 77 | NE, NNE | 14.4 | 8 | Ci., Ci.-S. | Cu. NE | 14.2 | |
| 21 | 60.87 | 26.1 | 30.2 | 23 | 82.7 | ENE | 10.1 | 7.3 | Ci.-S. | Cu. ENE | 4.1 | ● a. p° a. p. |
| 22 | 60.58 | 24.8 | 29.2 | 22.5 | 90.3 | SE | 6.7 | 8.7 | Ci., Ci.-S. | Cu. NE quad. | 34.5 | ● d a. p. |
| 23 | 59.20 | 25.4 | 28.9 | 23 | 87.2 | NE | 10.2 | 8.7 | Ci.-S. | Cu., S.-Cu. NE | 20.9 | ●° a. p. ⌓ p. |
| 24 | 58.76 | 23.4 | 24.8 | 21.5 | 95.2 | NE | 18.1 | 10 | Ci.-S. | N. NE | 106.9 | ● a. p. |
| 25 | 59.29 | 24.4 | 28.5 | 22.2 | 89.8 | NNE | 16.6 | 9.3 | Ci.-S. | Cu.-N., S.-Cu. NNE | 70.5 | ● a. ●² p. |
| 26 | 58.42 | 25.2 | 29.7 | 22.1 | 90.3 | ENE, NE | 5 | 5.7 | Ci.-S., Ci. | Cu. E | .5 | ● d a. ⌓ p. |
| 27 | 57.59 | 25.1 | 30 | 21.8 | 90.2 | NNE | 3.6 | 3 | Ci. | Cu. N, NW | ------ | ⌓² a. ⌓ d p. |
| 28 | 57.58 | 25.6 | 31.1 | 21.3 | 89.2 | NE | 4.8 | 3.7 | Ci. | Cu. E | ------ | ⌓² a. ⌓ p. |
| 29 | 58.24 | 26.7 | 30.4 | 23.3 | 85.3 | ENE | 9.1 | 6.2 | Ci. | Cu. ENE | 4.6 | ● a. |
| 30 | 58.36 | 26.2 | 30.3 | 23 | 88 | E quad. | 6.7 | 5.2 | Ci. | Cu. E | .3 | ● a. ⊤ a. p. ●° p. |
| 31 | 58.25 | 25.9 | 30.8 | 22.3 | 87.8 | NE | 5.1 | 1.8 | Ci. | Cu. E | ------ | ⌓² a. p. |
| Mean | 760.02 | 25.3 | 29.1 | 22.5 | 87.2 | ------------ | 10.5 | 7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ------------------ | ------------------ | 380.3 | |

### SAN ISIDRO.

[$\phi=15°\ 22'$ N; $\lambda=120°\ 53'$ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Upper. | Lower. | | |
| | mm | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 761.29 | 23.5 | 29.1 | 18.5 | 76.3 | E, WNW | 1.8 | 3.8 | Ci. SE | Cu. E quad. | ------ | ⌓² a. ⌓ p. |
| 2 | 60.66 | 24.4 | 30.2 | 19.4 | 75.8 | E quad. | 1.3 | 4.3 | Ci. SE | Cu. NE | ------ | ⌓ ≡° a. |
| 3 | 61.44 | 23.9 | 29.2 | 19 | 75 | E quad. | 2.2 | 3.8 | A.-Cu. ESE | Cu. E | ------ | ⌓² a. ⌓ p. |
| 4 | 61.86 | 24.2 | 30.6 | 17.8 | 76 | ESE, NNW | 1.8 | 5.8 | A.-Cu. NE | Cu., N. E | ------ | ⌓ a. |
| 5 | 61.58 | 26 | 31.2 | 22 | 76.5 | NW | 1.5 | 5.7 | A.-Cu. ESE | Cu., S.-Cu. E | ------ | ϟ p. |
| 6 | 61.36 | 25.4 | 31.5 | 21.5 | 78.2 | NW, NE | 1.7 | 5 | A.-Cu. E | Cu. NE | ------ | ⌓ a. |
| 7 | 61.88 | 24.6 | 30.7 | 20 | 76.7 | NE quad. | 1.8 | 4.3 | A.-Cu. NE | Cu. E quad | ------ | ⌓² a. ⊕ p. |
| 8 | 61.97 | 23.8 | 29.2 | 19.2 | 76.2 | NE quad. | 1.7 | 4.5 | Ci. SE | Cu. E | ------ | ⌓ a. p. |
| 9 | 59.50 | 24.3 | 30.5 | 19 | 76.2 | NW quad. | 1 | 4.7 | Ci. | Cu. ENE | ------ | ⌓² a. d° ⊕° p. |
| 10 | 57.81 | 26 | 31.7 | 20.5 | 75.2 | ENE | 1.2 | 5.8 | Ci. | Cu. NE quad. | ------ | ⌓ a. |
| 11 | 57.74 | 27 | 31.7 | 23.1 | 76.2 | NE | 1 | 8.3 | A.-Cu. ESE | Cu. E quad. | ------ | d° p. |
| 12 | 58.85 | 25.3 | 29.5 | 23 | 76.5 | ESE | 1.8 | 7.5 | A.-Cu. SE | Cu. E quad. | ------ | ⊕ p. |
| 13 | 60.34 | 25 | 30.4 | 20 | 72.8 | E quad. | 1.5 | 4 | A.-Cu. SE | Cu. E, ENE | ------ | ⌓ p. |
| 14 | 60.43 | 25.3 | 31.3 | 20.5 | 77.5 | NW | 1.2 | 6 | A.-Cu. ESE | Cu. NE | ------ | ⌓ a. p. d° p. |
| 15 | 59.08 | 25.2 | 31.2 | 20.2 | 78.7 | N quad. | 1.5 | 5.7 | A.-Cu. SE | Cu. N, NNE | ------ | ⌓² ≡ a. |
| 16 | 59.44 | 25.6 | 30.2 | 20.5 | 77.7 | N quad. | 1.8 | 4.7 | A.-Cu. SE | Cu. NE | ------ | ⌓ p. |
| 17 | 59.71 | 24.6 | 30.5 | 18.5 | 76 | NNW | 1.5 | 5 | A.-Cu. SE | Cu. NE | ------ | ⌓² ≡ a. ⌓ p. |
| 18 | 60.13 | 25.5 | 31.7 | 20.5 | 75.7 | NW | 1.7 | 5 | Ci. SE | Cu. NNW | ------ | ⌓ ∞² a. |
| 19 | 60.70 | 24.4 | 30.4 | 20.5 | 78.8 | NW | 1.7 | 5.7 | A.-Cu. SE | Cu. N quad. | ------ | ⌓ a. |
| 20 | 60.94 | 23.8 | 29.3 | 20 | 78.2 | NNW | 1.7 | 5.7 | A.-Cu. SE | Cu. NE | ------ | |
| 21 | 60.54 | 24.5 | 30.6 | 19.9 | 76.5 | NNW, ESE | 1.5 | 5.2 | A.-Cu. ESE | Cu. NE | ------ | ⌓ a. |
| 22 | 60.24 | 25.4 | 30.5 | 21.9 | 76.2 | E, NW | 1.5 | 6.7 | A.-Cu. SE | Cu. NE | ------ | |
| 23 | 58.98 | 25 | 31.2 | 20.1 | 74.7 | NNW, ESE | 1.7 | 5 | A.-Cu. SE | S.-Cu., Cu. NE | ------ | ⌓ a. |
| 24 | 58.28 | 24.7 | 30.5 | 19.5 | 74.7 | NW | 1.3 | 5.7 | A.-Cu. SE | Cu. NE | ------ | ⌓² a. |
| 25 | 58.96 | 25.1 | 30.8 | 22 | 73 | E quad. | 1.5 | 7 | A.-Cu. E | Cu. NE | ------ | ⌓ a. ⌒² p. |
| 26 | 58.10 | 25.3 | 30.8 | 21 | 75.5 | E quad. | 1.7 | 6.2 | A.-Cu. ESE | Cu. E | ------ | ⌓ p. |
| 27 | 57.28 | 25.6 | 32.4 | 20.2 | 79 | NW quad. | 1 | 4.3 | Ci. | Cu. W | 8.9 | ⌓² ≡° a. ⊤ ● p. |
| 28 | 57.08 | 25 | 32 | 21.5 | 83.8 | NW, E | 1.2 | 6.5 | Ci. | Cu. NW, E | 5.1 | ≡ a. ● ⌈ϟ ⌒² p. |
| 29 | 57.58 | 25.2 | 30.3 | 21 | 76.8 | E quad. | 1.8 | 3.8 | A.-Cu. SE | Cu. E | ------ | ⌓² ≡° a. |
| 30 | 57.84 | 25.6 | 31.9 | 19.1 | 76.2 | NW, ESE | 1 | 5.3 | Ci.-S. SE | Cu. E | ------ | ⌓ ⊤ ϟ a. |
| 31 | 57.55 | 26.6 | 33.1 | 21.4 | 73.8 | E quad. | 1.3 | 5.7 | Ci. | Cu. ESE | ------ | ⌓ ≡° a. |
| Mean | 759.65 | 25 | 30.8 | 20.4 | 76.5 | ------------ | 1.5 | 5.4 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ------------------ | ------------------ | 14 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 761 | 26.2 | 33.2 | 20.6 | 81.3 | S | 10.9 | 5.7 | Ci. | S.-Cu. | ------ | |
| 2 | 60.53 | 25.4 | 29.6 | 20.8 | 87.5 | NW | 9.6 | 3.2 | A.-Cu. | Cu., S.-Cu. | ------ | |
| 3 | 61.11 | 25.5 | 32.8 | 20.3 | 81.2 | SE quad. | 9.4 | 3.2 | Ci. | Cu. SE | ------ | |
| 4 | 61.68 | 25.1 | 31 | 18.8 | 85.2 | SE, NW | 9.4 | 3.7 | Ci. | Cu., S.-Cu. | ------ | |
| 5 | 61.72 | 26 | 30 | 21.6 | 88.5 | NW | 12 | 4.2 | ------ | S.-Cu. | ------ | |
| 6 | 61.15 | 26 | 29.9 | 21.8 | 88.2 | NW | 9.2 | 4.2 | Ci. | Cu., S.-Cu. | ------ | |
| 7 | 61.46 | 25.8 | 31.6 | 21.1 | 84.7 | SE, S | 10.6 | .7 | Ci. | Cu. | ------ | ≡° a. |
| 8 | 61.67 | 25.7 | 33.3 | 21.2 | 81.7 | SE quad. | 11.9 | 4.8 | Ci., Ci.-S. | Cu., S.-Cu. | ------ | ⊍ p. |
| 9 | 59.25 | 25.6 | 30.6 | 19.4 | 81.2 | SE, NW | 11.9 | 2.7 | Ci., Ci.-S. | Cu., S.-Cu. | ------ | |
| 10 | 57.79 | 26.5 | 29.6 | 22.2 | 80.3 | NW | 14.6 | 2.3 | Ci. | Cu., S.-Cu. | ------ | |
| 11 | 57.71 | 26.2 | 30.1 | 23 | 82.7 | NW | 11.9 | 6.8 | ------ | S.-Cu. NNW, ESE | ------ | |
| 12 | 58.36 | 26.6 | 32.6 | 23.5 | 76.7 | S quad. | 10 | 7.2 | ------ | S.-Cu. SSE, SE | ------ | ≡° a. |
| 13 | 59.95 | 25.8 | 31.9 | 20.9 | 74.3 | S quad. | 10.3 | 2.8 | A.-Cu. | Cu., S.-Cu. | ------ | |
| 14 | 60.32 | 25.9 | 31.2 | 20.8 | 78.3 | SE, NW | 9.6 | 4 | A.-Cu. | Cu., S.-Cu. | 1 | |
| 15 | 59.06 | 25.7 | 29.3 | 22 | 88.5 | NW | 11.6 | 6.3 | ------ | S.-Cu. NNW, NW | ------ | p° a. ⊍ p. |
| 16 | 59.02 | 26.7 | 33.6 | 22.2 | 83 | S quad. | 8.2 | 7 | ------ | S.-Cu. S | ------ | ⊍ a. |
| 17 | 59.54 | 25.6 | 32.1 | 20 | 78.5 | S, NW | 11.7 | 4.2 | Ci. | Cu., S.-Cu. | ------ | ⊍ p. |
| 18 | 60.21 | 25.6 | 29.4 | 21.6 | 84.8 | NW | 17.7 | 3.2 | Ci. | Cu. NW | ------ | Ω a. ⊍ p. |
| 19 | 60.78 | 25.1 | 28.4 | 22.6 | 82.4 | NNW, NW | 18.5 | 5.5 | Ci. | Cu. NW | ------ | ⊍ p. |
| 20 | 60.77 | 25 | 28.9 | 20.6 | 80.3 | N, NW | 11.8 | 5.2 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 21 | 60.45 | 25 | 29.7 | 19.9 | 81.8 | N quad. | 12 | 4 | A.-Cu. S | S.-Cu. | ------ | Ω a. |
| 22 | 60.33 | 25 | 28.8 | 21.1 | 84.7 | Variable | 11.6 | 7.3 | A.-Cu. | S.-Cu. SSE | .5 | |
| 23 | 58.90 | 25.3 | 28.9 | 21.7 | 86 | NW quad. | 8.5 | 4.8 | Ci. | S.-Cu. NW | ------ | d a. <° p. |
| 24 | 57.98 | 25.5 | 31.5 | 20.4 | 79.5 | SE, NW | 9 | 4 | Ci. | S.-Cu. SE | ------ | Ω a. |
| 25 | 58.51 | 25.6 | 33.8 | 20.1 | 77 | Variable | 8.5 | 5.8 | A.-Cu. SSE | S.-Cu. SE | ------ | |
| 26 | 57.82 | 26.7 | 34.6 | 21.5 | 76.5 | SE, NW | 12.7 | 5.3 | ------ | S.-Cu. SE | ------ | |
| 27 | 57.25 | 25.9 | 30.3 | 21.4 | 86.7 | NE, NW | 11.4 | .8 | ------ | Cu. | ------ | ≡° Ω a. |
| 28 | 56.99 | 25.8 | 29.9 | 21.1 | 86.2 | SE, NW | 10 | 3.2 | Ci. | Cu. SSE | ------ | ≡° Ω a. |
| 29 | 57.12 | 27.3 | 34.4 | 21.6 | 81 | SSE, N | 8.6 | 3.8 | Ci. | S.-Cu. SE | ------ | ≡° Ω a. |
| 30 | 57.58 | 26.4 | 34 | 20.5 | 80 | SE | 7.9 | 4.5 | Ci., A.-Cu. | Cu., S.-Cu. | ------ | ≡° Ω a. |
| 31 | 57.36 | 27.1 | 33.8 | 21.8 | 82.5 | Variable | 9 | 2.5 | A.-Cu. | Cu., S.-Cu. | ------ | Ω a. |
| Mean | 759.46 | 25.9 | 31.3 | 21.2 | 82.3 | ------ | 11 | 4.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1.5 | |

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 7.5 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Clouds. Amount (mean). | Upper | Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 760.78 | 26.7 | 32.3 | 22. | 71.8 | SE quad. | 3 | 9.2 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 2 | 60.53 | 26.6 | 29.9 | 24.9 | 80.8 | NNE | 4.5 | 7.2 | Ci. | S.-Cu., Cu. NNE | ------ | |
| 3 | 60.92 | 26.4 | 32.1 | 20.9 | 79.5 | Variable | 2.2 | 6.3 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 4 | 61.60 | 25.3 | 31.6 | 18.5 | 82.2 | NNE | 2.8 | 7.3 | Ci.-S. | S.-Cu., Cu. | ------ | Ω² ≡° a. |
| 5 | 61.84 | 26.8 | 30.3 | 23.5 | 84.3 | NNE | 3.3 | 9.2 | Ci.-S. | Cu. NE, NNE | ------ | |
| 6 | 61.16 | 26.5 | 29.9 | 22.3 | 86.8 | NNE | 3.7 | 6.8 | Ci.-S. | Cu. NNE, N | ------ | |
| 7 | 61.39 | 24.9 | 30.5 | 19.5 | 84.8 | SE quad. | 2.5 | 1.8 | Ci.-S. | S.-Cu. | ------ | Ω² ≡ a. |
| 8 | 61.40 | 25.3 | 31.6 | 21.1 | 79.4 | SE quad. | 3 | 8 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. ○° a. p. |
| 9 | 59.33 | 24.8 | 31.5 | 17.5 | 83. | NNE | 2.7 | 4 | Ci.-S. | S.-Cu., Cu. | ------ | Ω² ∞ ≡ a. |
| 10 | 58.03 | 26.8 | 30. | 25.5 | 84.3 | NNE | 4.3 | 7.5 | Ci.-S. | Fr.-Cu. N, NE | ------ | ⊍° p. |
| 11 | 57.95 | 26.8 | 30.1 | 25.3 | 86.8 | NNE | 4.8 | 9.5 | Ci.-S. | Cu. NNE, N | ------ | ↙° ⊍² p. |
| 12 | 58.50 | 26.6 | 30. | 22.7 | 81.7 | NNE | 3.3 | 7.7 | Ci.-S. | S.-Cu. | ------ | ↙° ⊍² a. d° p. |
| 13 | 59.90 | 24.9 | 31.1 | 19.8 | 85.8 | S, NNE | 2.2 | 4.7 | Ci.-S. | S.-Cu. | ------ | Ω² ≡ a. |
| 14 | 60.40 | 25.4 | 30.6 | 19.9 | 86.3 | NW quad. | 2.5 | 5.8 | Ci.-S. | Fr.-Cu. N | ------ | Ω ≡° a. ⊍° p. |
| 15 | 59.25 | 26.1 | 28.8 | 24.9 | 88.7 | N | 5.3 | 8 | Ci.-S. | Cu. N | ------ | ↙° p. |
| 16 | 59.02 | 25.7 | 29.6 | 22.3 | 86. | N quad. | 2.3 | 8.8 | Ci.-S. | S.-Cu. | ------ | |
| 17 | 59.58 | 25.1 | 31.7 | 18.7 | 82.7 | NNE | 3.2 | 5.8 | Ci.-S. | S.-Cu., Cu. | ------ | Ω² ∞ ≡ a. |
| 18 | 60.58 | 26. | 28.6 | 24.4 | 87.5 | NNE | 5.2 | 9.7 | Ci.-S. | Cu. NE quad. | ------ | ⊍° a. ↙° p. |
| 19 | 61.05 | 25.1 | 28.2 | 24. | 87.3 | NNE, N | 6.2 | 10 | Ci.-S. | Cu. N | 1.3 | ⊍° d° a. ↙° a. p. |
| 20 | 60.96 | 24.7 | 27.1 | 23.1 | 89.5 | NNE | 5.3 | 9.5 | Ci.-S. | Cu. NE | 1.8 | p ↙° a. p. ●° p. |
| 21 | 60.70 | 25.8 | 29.4 | 24.1 | 87.7 | NNE | 4.7 | 8.7 | Ci.-S. | Cu. NE, NNE | ------ | |
| 22 | 60.45 | 25.7 | 27.5 | 24.8 | 90.5 | NNE | 5 | 10 | Ci.-S. | S.-Cu.,Cu. NNE,N | ------ | ↙° p. |
| 23 | 59.11 | 25.5 | 28.3 | 24.2 | 90.8 | N | 5.3 | 6.7 | Ci.-S. | Cu. NNE | ------ | ↙° a. |
| 24 | 57.94 | 25.4 | 32.3 | 19.4 | 84.3 | N quad. | 2 | 5.8 | Ci.-S. | S.-Cu. | ------ | Ω² ∞ ≡ a. |
| 25 | 58.30 | 25.8 | 32.6 | 20. | 82.5 | SE quad. | 1.7 | 8.3 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 26 | 57.84 | 26.5 | 33.6 | 21.1 | 83.5 | Variable | 2.3 | 4.8 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 27 | 57.32 | 26.4 | 30.3 | 21.6 | 88. | N quad. | 2.5 | 3 | Ci. | Cu. NNW | ------ | Ω ≡° a. |
| 28 | 57.02 | 25.1 | 29.9 | 20.4 | 90.2 | N | 2.8 | 4.8 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 29 | 57.13 | 26. | 33.6 | 21.5 | 89.2 | Variable | 2 | 4.5 | Ci.-S. | Cu. SE | ------ | Ω ≡° a. |
| 30 | 57.47 | 25.6 | 32.5 | 21.3 | 84.5 | SE quad. | 1.5 | 8.2 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. ○° a. p. |
| 31 | 57.32 | 26.5 | 33.7 | 21.3 | 88.5 | SSE | 2 | 9.3 | Ci.-S. | Cu. W | ------ | Ω ≡° a. |
| Mean | 759.51 | 25.8 | 30.6 | 22 | 85.1 | ------ | 3.4 | 7.1 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 3.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 637.93 | 16.7 | 22.8 | 13.3 | 80.5 | E quad. | 12.4 | 8.9 | A.-Cu. W | Fr.-Cu. NW, N | ------ | ≡² p. |
| 2 | 37.29 | 16.9 | 22 | 12.7 | 82.5 | E quad. | 12.2 | 4.9 | Ci. | S.-cf. EbyN | ------ | ≡° p. |
| 3 | 37.79 | 16.2 | 20.9 | 12.9 | 80.8 | E quad. | 11.4 | 4.7 | Ci. | S.-Cu. E | ------ | Ω² ≡° a. |
| 4 | 38.40 | 16.8 | 22.9 | 12.9 | 76.8 | E quad. | 21.3 | 5 | Ci. | Cu., S.-Cu. ESE | ------ | |
| 5 | 38.73 | 17.8 | 22.9 | 14.1 | 86.2 | E, WSW | 13 | 5.9 | Ci. | S.-Cu S, SEbyE | ------ | Ω a. ≡² p. |
| 6 | 38.58 | 17.6 | 23.9 | 14.6 | 83.2 | E quad. | 13.8 | 5.1 | Ci. | Cu. NE | ------ | Ω² a. ≡ p. |
| 7 | 38.56 | 17.2 | 24.2 | 13.4 | 82.2 | E | 15.1 | 3.4 | Ci. | Fr.-Cu. E | ------ | Ω a. ≡° p. |
| 8 | 38.44 | 15.8 | 22.9 | 12.3 | 80.3 | E | 15.2 | 8.4 | Ci.-S. SW | Cu. SEbyE | ------ | ≡² p. |
| 9 | 36.72 | 18.2 | 24 | 13.6 | 73.2 | E | 17.2 | 3.4 | Ci. | Fr.-Cu. ESE | ------ | ≡ p. |
| 10 | 35.64 | 17.7 | 23.5 | 14.1 | 87.7 | WSW, N | 11.8 | 5 | Ci. | Cu. E | ------ | Ω² a. ≡ ∞ p. |
| 11 | 35.49 | 17.4 | 23.2 | 14.6 | 87 | W | 9.4 | 5.7 | ------ | Cu. | ------ | Ω² a. ≡ p. |
| 12 | 35.88 | 16.6 | 23.4 | 13.7 | 82.7 | SE quad. | 13.7 | 6.4 | A.-Cu. S | Cu., S.-Cu. | ------ | Ω² a. d p. ≡ p. |
| 13 | 37.14 | 16.5 | 23.6 | 13 | 80.5 | E | 17.4 | 5.7 | Ci.-Cu. | Cu. | ------ | Ω° a. |
| 14 | 37.63 | 17.3 | 22.7 | 14 | 84.5 | E, W | 11.5 | 5.3 | A.-Cu. SE | S.-Cu. NE | ------ | Ω² a. ≡² d° p. |
| 15 | 36.47 | 17.7 | 23.4 | 14.3 | 85.7 | Variable | 12.6 | 5 | ------ | S.-Cu. | ------ | Ω a. ≡° p. |
| 16 | 36.28 | 16.9 | 23.2 | 13.5 | 84 | E, WSW | 15.5 | 4.4 | ------ | S.-cf. SW | ------ | Ω a. ≡ p. |
| 17 | 36.62 | 16.6 | 23.1 | 12.7 | 81.8 | E quad. | 14.3 | 3.4 | Ci. | Cu. | ------ | Ω a. ≡ p. |
| 18 | 37.12 | 16.4 | 22.4 | 12.9 | 87.7 | W | 11 | 7.6 | Ci. | S.-Cu. S, NW | ------ | Ω a. ≡² p. |
| 19 | 37.17 | 15.4 | 21.2 | 12.5 | 87.2 | E | 10.5 | 5.4 | Ci. | Cu. | ------ | Ω² a. ≡ p. |
| 20 | 37.26 | 15.6 | 21.4 | 11.6 | 86.2 | SW quad | 11.2 | 5.7 | Ci. WSW | S.-Cu. NW | ------ | Ω² a. ≡ p. |
| 21 | 37.34 | 15.8 | 21.3 | 13 | 87.3 | Variable | 10.6 | 7.3 | Ci. | S.-Cu. SW | ------ | Ω² a. ≡² p. |
| 22 | 37.16 | 15.7 | 21.1 | 13.3 | 91.2 | Variable | 8.9 | 8.9 | Ci. | S.-Cu. SW, S | ------ | Ω a. ≡² d p. |
| 23 | 36.10 | 16.6 | 22.5 | 13.1 | 84.2 | Variable | 11.3 | 6.3 | Ci. | Cu.-N. NW | ------ | Ω a. ≡° p. |
| 24 | 35.42 | 16.1 | 23 | 13 | 79 | E | 16.5 | 6 | Ci. | Cu.-N. E | ------ | Ω a. ≡² p. |
| 25 | 35.91 | 16.6 | 24 | 13.4 | 81 | E | 17.7 | 8.4 | Ci. SW | S.-Cu. E | ------ | Ω a. ≡° d p. |
| 26 | 35.58 | 17.1 | 24.4 | 14 | 81.3 | E | 17.3 | 5.1 | A.-Cu. | S.-Cu. SSE | 2.3 | ≡² ● p. |
| 27 | 35.11 | 17.4 | 22.5 | 14.4 | 81.8 | W quad. | 11.4 | 4.6 | ------ | S.-Cu. S | ------ | Ω² a. ≡² p. |
| 28 | 34.96 | 18.1 | 23.3 | 14.5 | 80.5 | E | 12.2 | 3.7 | Ci. | Cu. | ------ | Ω a. ≡° p. |
| 29 | 35.14 | 18 | 24.2 | 14.5 | 84.7 | E quad. | 16.8 | 5.4 | Ci. | Cu. | ------ | Ω a. ≡² p. |
| 30 | 35.56 | 17.8 | 22.6 | 14.2 | 80.8 | Variable | 13.9 | 6.3 | Ci. | Cu. | ------ | Ω a. ≡² p. |
| 31 | 35.64 | 17.7 | 24.3 | 14.4 | 85 | SW quad. | 9.3 | 5.7 | Ci. | S.-cf. S, SW | ------ | Ω ≡° a. ∞ a. p. |
| Mean | 636.74 | 16.9 | 22.9 | 13.5 | 83.1 | ------ | 13.4 | 5.7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 2.3 | |

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[1] The barometric readings of this station are not reduced to sea level.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 760.97 | 25.7 | 31.1 | 22.2 | 74.8 | Variable | 7.4 | 3.3 | Ci.-S. | Cu. | ------ | |
| 2 | 60.80 | 24.6 | 29 | 20.7 | 75.5 | N quad. | 13.7 | .8 | Ci.-S. | S.-Cu., Cu. | ------ | d a. |
| 3 | 61 | 24.8 | 30 | 20.4 | 73.5 | Variable | 6.9 | 3.2 | Ci.-S. | S.-Cu., Cu. | ------ | |
| 4 | 61.74 | 25.5 | 30.5 | 21.4 | 73.7 | Variable | 7.2 | 3.2 | Ci.-S. | S.-Cu. | ------ | |
| 5 | 61.99 | 25.3 | 30 | 22.1 | 78.3 | N quad. | 13 | 1.3 | Ci.-S. | S.-Cu., Cu. | ------ | |
| 6 | 61.26 | 26.2 | 31.7 | 21.6 | 71.2 | NE quad. | 12 | .3 | Ci.-S. | S.-Cu. | ------ | |
| 7 | 61.45 | 27.1 | 32.4 | 22.4 | 64.8 | Variable | 10.3 | 0 | Ci.-S. | S.-Cu. | ------ | |
| 8 | 61.40 | 25.6 | 31.6 | 20.8 | 63.5 | NE quad. | 9.5 | 0 | Ci.-S. | S.-Cu. | ------ | |
| 9 | 59.45 | 25.4 | 30.6 | 20.3 | 67.5 | Variable | 6.7 | 0 | Ci.-S. | Cu. | ------ | ⊕ p. |
| 10 | 58.12 | 24.4 | 28.9 | 19.7 | 78 | N | 14.2 | 0 | Ci.-S. | Cu., S.-Cu. | ------ | ⊕ p. |
| 11 | 58.04 | 24.4 | 30.1 | 20.2 | 76.5 | N | 12.1 | 0 | Ci.-S. | Cu. | ------ | Ω a. |
| 12 | 58.56 | 25.3 | 31.9 | 20.2 | 65.3 | Variable | ------ | 3.3 | Ci.-S. | Cu. | ------ | d p. |
| 13 | 60.12 | 26.9 | 31.2 | 23.3 | 55.2 | E quad. | 11.9 | 1 | Ci.-S. | S.-Cu., Cu. | ------ | ⊕ p. |
| 14 | 60.35 | 25.9 | 31.5 | 21.3 | 72.7 | NW quad. | 7.4 | 3.5 | A.-Cu., Ci.-S. | S.-Cu. | ------ | |
| 15 | 59.31 | 24.3 | 28.3 | 21.4 | 75.3 | N | 18 | 1.2 | A.-Cu., Ci.-S. | Cu. | ------ | ⊕ ≡° a. |
| 16 | 59.18 | 25.4 | 31 | 20.4 | 65.7 | N quad. | 8.1 | 6.5 | Ci.-S. | Cu., S.-Cu. | ------ | d a. |
| 17 | 59.75 | 25.6 | 30.9 | 22 | 63.2 | Variable | ------ | 3.7 | Ci.-S. | S.-Cu., Cu. | ------ | |
| 18 | 60.73 | 23.9 | 27.8 | 21.2 | 75.2 | NE quad. | 18.2 | 3.2 | Ci.-S., A.-Cu. | S.-Cu., Cu. | ------ | ≡° a. |
| 19 | 61.24 | 22.6 | 27.7 | 19.2 | 77.3 | N | 21.4 | 2.5 | A.-Cu., Ci.-S. | Cu. N | ------ | ≡° Ω a. |
| 20 | 61.16 | 22.9 | 28 | 18.9 | 77 | N quad. | 13.2 | 1.5 | Ci.-S., Ci. | Cu. | ------ | ≡° a. |
| 21 | 60.91 | 23.3 | 29.1 | 18.8 | 78.3 | NE quad. | 14.3 | 1.3 | Ci.-S. | S.-Cu., Cu. | ------ | Ω ≡° a. |
| 22 | 60.56 | 23.6 | 29.4 | 19.5 | 80.5 | N quad. | 15.7 | 2.8 | A.-Cu. | Cu., S.-Cu. | ------ | |
| 23 | 58.96 | 23.7 | 28 | 20.2 | 75 | N | 18.9 | 1.7 | Ci.-S. | S.-Cu. | ------ | |
| 24 | 58.07 | 24.8 | 30.8 | 19 | 66.5 | Variable | 7.5 | 0 | Ci.-S. | S.-Cu., Cu. | ------ | ≡° a. |
| 25 | 58.63 | 25.8 | 31.3 | 21 | 64.8 | Variable | 7 | .5 | Ci.-S., A.-Cu. | S.-Cu. | ------ | |
| 26 | 58 | 25.7 | 31.5 | 21.7 | 73.3 | Variable | 6.9 | .7 | Ci.-S., A.-Cu. | S.-Cu. | ------ | |
| 27 | 57.46 | 25.2 | 30.9 | 22.1 | 76.2 | N quad. | 7.7 | .8 | Ci.-S. | S.-Cu. | ------ | Ω ≡° a. |
| 28 | 57.30 | 24.3 | 30.5 | 20.4 | 80.8 | N quad. | 9.4 | 0 | Ci.-S. | S.-Cu., Cu. | ------ | Ω ≡° a. |
| 29 | 57.23 | 25.9 | 31.9 | 20.6 | 75.8 | E quad. | 6 | 4 | Ci.-S. | S.-Cu. | ------ | ≡° Ω a. ∞ p. |
| 30 | 57.60 | 27.1 | 32.1 | 22.2 | 71.2 | Variable | 4.9 | 4.2 | A.-Cu. SSW | S.-Cu. | ------ | ∞ a. |
| 31 | 57.48 | 26.5 | 31.8 | 22.4 | 74 | Variable | 5.8 | 1.7 | Ci.-S., Ci. | S.-Cu. | ------ | |
| Mean | 759.64 | 25.1 | 30.4 | 20.9 | 72.3 | ------ | 10.9 | 1.8 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean.) | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 762.03 | 24 | 30.3 | 19.5 | 84.8 | ESE | 0.2 | 6 | Ci. | Cu. S | ------ | Ω a. |
| 2 | 61.42 | 22.6 | 28.6 | 18.2 | 87.2 | N | .5 | 6 | ------------------ | Cu.-N. NNE, N | 4.3 | $\Omega^{2}$ $\equiv^{c}$ a. ● p. |
| 3 | 62.12 | 23.1 | 28.6 | 20.7 | 88.8 | ESE | .2 | 6.8 | ------------------ | Cu.-N. E | ------ | d ● a. |
| 4 | 63.05 | 23.8 | 29.4 | 20.4 | 84.8 | W, SW | .3 | 6 | ------------------ | S.-Cu. | ------ | d a. |
| 5 | 62.55 | 24.6 | 32.2 | 18.5 | 83.5 | W, N | .3 | 2.5 | Ci. | Cu. SE | ------ | Ω $\equiv^{\circ}$ a. |
| 6 | 62.83 | 24.2 | 29.2 | 20.6 | 83.9 | NW | 1.3 | 8.2 | ------------------ | S.-Cu. NW | ------ | Ω a. |
| 7 | 63.86 | 23 | 27.1 | 20.4 | 83.4 | N quad. | 1.2 | 9 | ------------------ | Cu.-N. NE | ------ | Ω ⌒ a. d p. |
| 8 | 63.94 | 22.7 | 28.4 | 19 | 82.3 | N | .5 | 6.7 | ------------------ | S.-Cu. NE | ------ | Ω a. |
| 9 | 60.80 | 23.4 | 30.8 | 17.6 | 86.8 | SE, NE | .8 | 5.5 | ------------------ | Cu. S | ------ | $\Omega^{2}$ ≡ a. |
| 10 | 58.71 | 23.6 | 28 | 20 | 92.2 | NE | .8 | 7 | ------------------ | Cu. N, NE | ------ | $\Omega^{2}$ ≡ d a. |
| 11 | 58.86 | 23.8 | 27.6 | 21.6 | 87.8 | NW | 1.7 | 6.8 | Ci. | Cu. N | ------ | $\Omega^{2}$ a. |
| 12 | 60.68 | 23 | 27.5 | 20.5 | 81.2 | NW | 2 | 6.8 | ------------------ | S.-Cu. SW | ------ | $\Omega^{2}$ a. |
| 13 | 62.64 | 21.9 | 26.4 | 19.3 | 87.7 | N quad. | .7 | 9 | Ci.-S. | S.-Cu. W | ------ | Ω a. d p. |
| 14 | 62.15 | 23 | 28.4 | 20 | 88.8 | NW | .7 | 9.5 | Ci.-S. | S.-Cu. N | ------ | $\Omega^{2}$ a. d p. |
| 15 | 60.60 | 22.7 | 27.5 | 20.3 | 88.2 | N quad. | 1.7 | 6 | ------------------ | Cu., S.-Cu. N | ------ | $\Omega^{2}$ a. |
| 16 | 61.06 | 22 | 26.9 | 19 | 84.2 | NE, NW | 1.3 | 8.2 | ------------------ | S.-Cu. N | ------ | ∪ $\Omega^{2}$ a. |
| 17 | 61.30 | 22.5 | 27.5 | 18.5 | 83.3 | N | .7 | 8.3 | A.-Cu. N | S.-Cu. N | ------ | $\Omega^{2}$ a. |
| 18 | 61.23 | 23.3 | 27.5 | 20.5 | 85.5 | N quad. | 1 | 7.8 | ------------------ | S.-Cu. NE, N | ------ | Ω a. |
| 19 | 61.75 | 22.5 | 29 | 19.5 | 88 | NW | 1.3 | 4.8 | ------------------ | Cu., s.-cu. NW, W | ------ | $\Omega^{2}$ a. |
| 20 | 62.03 | 22.5 | 30 | 18.1 | 81.5 | NW quad. | .7 | 6.3 | Ci. | S.-Cu., Cu. | ------ | Ω a. |
| 21 | 61.61 | 23 | 30.7 | 18 | 83.7 | N quad. | .5 | 5.7 | ------------------ | S.-Cu., Cu. NE | ------ | $\Omega^{2}$ ≡ a. |
| 22 | 61.18 | 23.8 | 30.4 | 19.7 | 82.8 | NW quad. | .8 | 6.2 | ------------------ | Cu. NW | ------ | $\Omega^{2}$ a. |
| 23 | 60.56 | 22.7 | 26.3 | 20.1 | 87 | NW | 1.8 | 8.2 | ------------------ | S.-Cu., Cu. N | ------ | Ω a. |
| 24 | 60.26 | 23.2 | 37.9 | 20 | 80.5 | NW | .2 | 8.3 | Ci. | S.-Cu. E | ------ | Ω a. |
| 25 | 60.56 | 23.2 | 28.5 | 18.8 | 80 | NW | .3 | 7.8 | Ci.-S. | S.-Cu. E | ------ | Ω a. |
| 26 | 58.89 | 25.5 | 32.4 | 19.7 | 79.5 | SE | .5 | 6.5 | A.-Cu. SW | Cu. | ------ | Ω a. |
| 27 | 57.48 | 25 | 32 | 20 | 84.7 | NW | .7 | 5.2 | ------------------ | S.-Cu. | ------ | $\Omega^{2}$ ≡ a. |
| 28 | 57.43 | 25.7 | 33.8 | 21.2 | 84.3 | NW | .7 | 4.7 | ------------------ | S.-Cu. SE | ------ | $\Omega^{2}$ ≡ a. |
| 29 | 57.97 | 25.7 | 32.1 | 22.1 | 84 | NW | .5 | 5.8 | Ci.-S | Cu. SSE, S | ------ | $\Omega^{2}$ a. |
| 30 | 57.92 | 26.1 | 33.5 | 19.5 | 78.3 | SE | .3 | 5.5 | Ci.-S. | S.-Cu. | ------ | $\Omega^{2}$ ≡ a. |
| 31 | 57.69 | 26.6 | 36.4 | 20.1 | 79.3 | S, SE | .3 | 2.8 | Ci., Ci.-S. | Variable | ------ | $\Omega^{2}$ a. $\infty^{2}$ p. |
| Mean | 760.81 | 23.6 | 29.5 | 19.7 | 84.5 | ------------ | .8 | 6.6 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 4.3 | |

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 762.20 | 23.7 | 28.4 | 20.1 | 79.2 | SE | 5.4 | 3.5 | A.-Cu. W | S.-Cu. SE | ------ | |
| 2 | 61.92 | 22 | 25.5 | 19.6 | 88.8 | E, NE | 19.4 | 8.8 | ------------------ | Cu.-N. N, NE | 17.7 | ● a. p. |
| 3 | 62.69 | 22.5 | 25 | 21.1 | 92.3 | E | 15 | 9.2 | ------------------ | S.-Cu. E | 12.2 | ● a. ⌒ p. |
| 4 | 63.30 | 23.6 | 27.4 | 20.4 | 88.5 | SE quad. | 7 | 8 | A.-Cu. S | S.-Cu., Cu.-N. E, SE | 1.5 | ● a. |
| 5 | 62.86 | 24.6 | 29 | 20.1 | 80.8 | S, N | 4.5 | .3 | ------------------ | S.-Cu. | 4.3 | Ω $\equiv^{\circ}$ a. |
| 6 | 63.74 | 23.7 | 25.4 | 21.6 | 81.7 | NE, E | 20.6 | 10 | ------------------ | S.-Cu. NE, E | .3 | ● a. |
| 7 | 64.56 | 23.1 | 26.2 | 21.3 | 76.3 | E | 15.4 | 9.5 | ------------------ | S.-Cu. E | .3 | d a. |
| 8 | 64.44 | 23.3 | 26 | 19.5 | 73.7 | E | 8.8 | 8 | A.-Cu. SE, S | S.-Cu. E | ------ | |
| 9 | 60.75 | 23.4 | 28 | 19.1 | 83 | E | 3.2 | 5.5 | A.-Cu. SE | S.-Cu. E | ------ | Ω a. |
| 10 | 59.16 | 23.6 | 27.4 | 21 | 88.7 | Variable | 14.3 | 6.5 | ------------------ | S.-Cu., Cu.-N. NE | 10.7 | Ω $\equiv^{\circ}$ a. ● a. p. |
| 11 | 59.68 | 22.8 | 25.7 | 21 | 87.3 | NE | 11 | 10 | ------------------ | N. NE | 67.4 | ● a. p. |
| 12 | 61.66 | 21.7 | 24 | 20 | 83.2 | E | 23.9 | 10 | ------------------ | N. ENE | 19.4 | ● a. p. |
| 13 | 63.38 | 20.9 | 22.7 | 19.6 | 90.5 | E | 18.8 | 10 | ------------------ | Cu.-N., N. ENE, NE | 8.9 | ● a. p. |
| 14 | 62.80 | 22.9 | 25.4 | 21 | 87.3 | E | 14.2 | 10 | A.-Cu. E | Cu.-N., S.-Cu. ENE | 4.6 | ● a. p. |
| 15 | 61.54 | 21.8 | 25 | 20.1 | 89 | NE | 11.8 | 10 | ------------------ | N. NE | 21.8 | ● a. p. |
| 16 | 61.90 | 21.3 | 22.1 | 19.9 | 84.3 | E | 19.1 | 9.8 | A.-Cu. | N., S.-Cu. NE, E | 39.6 | ● a. p. |
| 17 | 61.82 | 21.6 | 24.6 | 19.1 | 87.3 | SE | 6.9 | 10 | ------------------ | S.-Cu SE quad. | 2.6 | $\equiv^{\circ}$ a. ● p. |
| 18 | 61.87 | 22.9 | 25.8 | 20.7 | 84 | E, N | 8.3 | 9 | ------------------ | Cu.-N. N | 17.9 | ● a. p. |
| 19 | 62.45 | 22.4 | 26.4 | 20.6 | 81.5 | Variable | 9.3 | 8.7 | ------------------ | Cu.-N. NE | 11.7 | ● a. p. |
| 20 | 62.55 | 22 | 25.6 | 20 | 87.2 | N | 5 | 7.2 | A.-Cu. E, SE | Cu.-N. W, N | 21.8 | ● a. |
| 21 | 61.91 | 23 | 27.9 | 18.6 | 82 | N | 3.3 | .8 | ------------------ | S.-Cu., Cu.-N. | ------ | Ω $\equiv^{\circ}$ a. |
| 22 | 61.86 | 23.4 | 27 | 20.6 | 82.5 | NE | 6.5 | 5.3 | A.-Cu. SW | S.-Cu., cu.-N. S, NE | 25.6 | ● p. |
| 23 | 61.36 | 22.4 | 23.9 | 20.3 | 84.7 | NE | 21.3 | 10 | ------------------ | N., S.-Cu. NE quad. | 15.5 | ● a. p. |
| 24 | 60.95 | 23 | 25.9 | 20 | 74.5 | E | 17.8 | 6.2 | A.-Cu. S | S.-Cu. E | ------ | |
| 25 | 61.14 | 22.1 | 25.3 | 19 | 81.3 | E | 6.9 | 8.3 | ------------------ | S.-Cu. E | ------ | |
| 26 | 59.24 | 23.3 | 29.2 | 19.6 | 86.2 | E | 5.8 | 3.3 | A.-Cu., Ci.-S. SW, NW | S.-Cu. | ------ | Ω a. ↯ ⊤ p. |
| 27 | 57.90 | 24.2 | 29 | 20.1 | 85.7 | E | 1.4 | 2 | A.-Cu. SW | S.-Cu., Cu.-N. | ------ | Ω $\equiv^{\circ}$ a. |
| 28 | 57.95 | 24.6 | 29 | 19.9 | 84.3 | E | 2.8 | 1.7 | ------------------ | S-.Cu. E | ------ | Ω $\equiv^{\circ}$ a. |
| 29 | 58.38 | 24.8 | 28 | 22.1 | 82.3 | E | 4.4 | 3 | A.-Cu. SW | S.-Cu., Cu.-N. S | ------ | |
| 30 | 58.12 | 24.8 | 28.8 | 21.6 | 82.7 | E | 4.8 | .2 | ------------------ | Cu.-N. | ------ | Ω a. ∞ p. |
| 31 | 57.94 | 25.3 | 31.8 | 21.2 | 85.8 | E | 9 | .2 | ------------------ | Cu.-N. | ------ | Ω ∞ a. ∞ ⊤ p. |
| Mean | 761.36 | 23.1 | 26.5 | 20.2 | 84.1 | ------------ | 10.5 | 6.6 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 303.8 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.3 | 22.5 | 98 | 79 | 10 | 10 | ------ | Ω a. |
| 2 | 32.9 | 22.2 | 92 | 75 | 4 | 5 | ------ | Ω a. |
| 3 | 31.3 | 22.5 | 91 | 67 | 10 | 10 | ------ | Ω° a. |
| 4 | 32.1 | 21 | 97 | 73 | 1 | 9 | 12.2 | Ω a. ↯ ● p. |
| 5 | 30.3 | 21.2 | 96 | 76 | 9 | 9 | ------ | |
| 6 | 31.5 | 21.5 | 96 | 75 | 1 | 10 | ------ | Ω a. [↯ p. |
| 7 | 32.3 | 23 | 98 | 67 | 10 | 6 | 28.4 | Ω a. |
| 8 | 31.3 | 23 | 96 | 75 | 10 | 9 | 3 | ●$^2$ d a. |
| 9 | 28.9 | 23.5 | 100 | 82 | 10 | 10 | 2 | ● d a. |
| 10 | 30.9 | 22.6 | 98 | 83 | 10 | 10 | 6.1 | Ω a. p$^2$ p. |
| 11 | 30.5 | 20.5 | 99 | 69 | 1 | 3 | ------ | ● a. |
| 12 | 30.9 | 20.5 | 95 | 79 | ------ | 4 | ------ | Ω a. |
| 13 | 31.1 | 20.6 | 98 | 66 | ------ | 3 | ------ | Ω a. |
| 14 | 31.8 | 22.2 | 96 | 72 | 9 | 5 | ------ | Ω a. |
| 15 | 31.8 | 22 | 96 | 66 | 1 | 3 | ------ | Ω a. |
| 16 | 31.8 | 21.8 | 96 | 74 | 9 | 4 | ------ | |
| 17 | 31.8 | 22.5 | 97 | 69 | 8 | 10 | ------ | Ω ‾ a. ↯ p. |
| 18 | 31.3 | 22 | 97 | 80 | 9 | 10 | 2 | Ω a. ⊤ p p. |
| 19 | 33.3 | 21 | 96 | 77 | 1 | 3 | ------ | Ω a. ⊤ p. |
| 20 | 31.3 | 21.5 | 96 | 69 | 10 | 10 | 8.1 | Ω a. ● p. |
| 21 | 32.8 | 21 | 96 | 57 | 3 | 6 | ------ | Ω a. |
| 22 | 31.8 | 21.9 | 96 | 72 | 9 | 7 | ------ | Ω a. |
| 23 | 32.8 | 21.5 | 96 | 56 | 2 | 5 | ------ | Ω a. |
| 24 | 32.7 | 21.2 | 96 | 78 | 2 | 9 | ------ | Ω a. |
| 25 | 32.8 | 21.2 | 96 | 74 | 1 | 10 | ------ | Ω a. |
| 26 | 32.3 | 21.2 | 96 | 70 | 2 | 10 | ------ | Ω a. |
| 27 | 31.8 | 21.5 | 96 | 71 | 8 | 6 | ------ | |
| 28 | 33.1 | 22.5 | 95 | 76 | 9 | 10 | ------ | Ω a. p° ↯ p. |
| 29 | 30.3 | 22.2 | 97 | 79 | 3 | 4 | ------ | Ω a. ⊤ p° p. |
| 30 | 30.5 | 21.5 | 96 | 73 | 10 | 5 | ------ | Ω a. p° p. |
| 31 | 33.3 | 22.2 | 93 | 70 | 7 | 6 | 7.1 | Ω° a. ↯ ● p. |
| Mean | 31.7 | 21.8 | 96.2 | 72.5 | 5.8 | 7.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 68.9 | |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29 | 22.5 | 88 | 71 | 10 | 8 | ------ | |
| 2 | ------ | ------ | 91 | ------ | 3 | ------ | ------ | Ω° a. |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | 30.3 | ------ | 90 | 68 | 9 | 4 | ------ | Ω° a. |
| 11 | 29.5 | 21.4 | 83 | 72 | 2 | 1 | ------ | Ω° a. |
| 12 | 29.6 | 21.5 | 90 | 73 | 4 | 7 | ------ | Ω° a. |
| 13 | 30 | 22 | 88 | 71 | 5 | 3 | ------ | Ω° ⊤° a. |
| 14 | 29 | 23 | 90 | 81 | 9 | 9 | ------ | d a. p. |
| 15 | 30.8 | 22.8 | 90 | 70 | 6 | 9 | ------ | [↯ a. |
| 16 | 30 | 22.3 | 89 | 74 | 4 | 5 | ------ | Ω° a. |
| 17 | 30.5 | 22.5 | 88 | 71 | 9 | 9 | ------ | |
| 18 | 29.1 | 22.5 | 88 | 72 | 8 | 10 | ------ | [↯ ●° p. |
| 19 | 31.8 | 22 | 90 | 65 | 3 | 2 | ------ | Ω° a. |
| 20 | 29.5 | 23 | 92 | 80 | 10 | 10 | 6.4 | [↯ ●° a. |
| 21 | 29 | 22.4 | 86 | 74 | 2 | 8 | ------ | Ω a. |
| 22 | 31.6 | 22.2 | 86 | 76 | 9 | 9 | ------ | |
| 23 | 31 | 22 | 81 | 57 | 7 | 8 | ------ | Ω° a. |
| 24 | 32 | 21.8 | 86 | 64 | 3 | 3 | ------ | Ω° a. |
| 25 | 31.7 | 21.6 | 84 | 60 | 2 | 2 | ------ | Ω a. |
| 26 | 30.5 | 22.5 | 86 | 77 | 5 | 9 | ------ | Ω° [↯ a. |
| 27 | 29.6 | 22.4 | 87 | 75 | 9 | 9 | ------ | |
| 28 | 30.5 | 23.5 | 84 | 74 | 10 | 10 | ------ | d p. |
| 29 | 29.9 | 23 | 87 | 77 | 6 | 7 | ------ | ●° a. |
| 30 | 29.4 | 22.4 | 86 | 78 | 7 | 5 | ------ | |
| 31 | 30.5 | 23.3 | 90 | 72 | 7 | 9 | 7.6 | d a. |
| Mean | 30.2 | 22.4 | 87.5 | 71.8 | 6.2 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.7 | 22 | 96 | 72 | 6 | 8 | ------ | |
| 2 | 30.7 | 20.9 | 97 | 81 | 6 | 7 | ------ | |
| 3 | 31.8 | 22 | 95 | 70 | 6 | 8 | ------ | |
| 4 | 32.1 | 22.1 | 96 | 66 | 5 | 6 | ------ | |
| 5 | 32.6 | 22.3 | 95 | 68 | 5 | 7 | ------ | |
| 6 | 32.8 | 22.7 | 96 | 69 | 6 | 7 | ------ | |
| 7 | 28.9 | 21.4 | 95 | 80 | 6 | 9 | ------ | |
| 8 | 31.9 | 21.7 | 96 | 72 | 5 | 9 | 21.8 | ● p. |
| 9 | 31.2 | 22 | 97 | 67 | 8 | 7 | ------ | |
| 10 | 32 | 20.9 | 95 | 64 | 5 | 5 | 23.4 | ● p. |
| 11 | 31 | 21 | 96 | 69 | 8 | 6 | ------ | |
| 12 | 32.3 | 21.1 | 96 | 57 | 5 | 7 | ------ | |
| 13 | 32.7 | 22.3 | 95 | 63 | 7 | 5 | ------ | |
| 14 | 31.3 | 22.1 | 97 | 71 | 6 | 5 | ------ | |
| 15 | 31.5 | 21 | 94 | 63 | 6 | 6 | ------ | |
| 16 | 31.8 | 23.1 | 96 | 68 | 5 | 6 | 8.4 | ● p. |
| 17 | 29.7 | 21.3 | 96 | 80 | 5 | 7 | ------ | |
| 18 | 31.2 | 21.9 | 96 | 68 | 6 | 6 | 22.1 | ≡° a. ● p. |
| 19 | 30.7 | 21.2 | 96 | 72 | 5 | 6 | ------ | ● a. |
| 20 | 31 | 22.4 | 97 | 64 | 5 | 6 | ------ | |
| 21 | 31.9 | 21.2 | 96 | 70 | 5 | 7 | 7.1 | ● p. |
| 22 | 30.9 | 20.2 | 93 | 64 | 6 | 5 | ------ | |
| 23 | 31.2 | 20.1 | 97 | 62 | 5 | 5 | ------ | |
| 24 | 32.8 | 21 | 94 | 62 | 6 | 5 | ------ | |
| 25 | 32.3 | 22 | 96 | 64 | 7 | 6 | ------ | |
| 26 | 33.2 | 21.2 | 96 | 67 | 6 | 5 | ------ | |
| 27 | 31.2 | 22.8 | 97 | 69 | 6 | 5 | ------ | |
| 28 | 32.4 | 21.4 | 96 | 64 | 6 | 6 | ------ | |
| 29 | 32.7 | 20 | 89 | 66 | 5 | 7 | ------ | |
| 30 | 30.3 | 20 | 92 | 71 | 5 | 7 | ------ | |
| 31 | 29.6 | 21 | 96 | 73 | 6 | 5 | ------ | |
| Mean | 31.5 | 21.5 | 95.5 | 68.3 | 5.8 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 82.8 | |

### COTABATO.

[$\phi$=7° 13′ N; $\lambda$=124° 15′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.1 | 22.6 | 96 | 66 | 3 | 10 | ------ | ≡° Ω a. ∞° p. |
| 2 | 31.5 | 21.6 | 96 | 64 | 3 | 8 | 6.9 | ≡° Ω a. d [↯ p. |
| 3 | 30.8 | 21.7 | 96 | 68 | 10 | 7 | ------ | Ω a. |
| 4 | 31.9 | 21.9 | 95 | 64 | 7 | 10 | 6.4 | Ω$^2$ a. d° ● [↯ p. |
| 5 | 30.6 | 21.7 | 98 | 66 | 10 | 8 | ------ | d$^2$ ≡ Ω a. |
| 6 | 31.3 | 22.5 | 95 | 67 | 7 | 9 | 3.8 | Ω° a. d$^2$ ⊤ ○ p. |
| 7 | 32 | 21.6 | 96 | 65 | 10 | 9 | 5.1 | ≡° Ω$^2$ a. ● p. |
| 8 | 32.1 | 22.3 | 95 | 61 | 3 | 8 | .8 | ≡° Ω$^2$ a. d [↯ p. |
| 9 | 31 | 23.5 | 92 | 66 | 10 | 8 | ------ | d° a. Ф° p. |
| 10 | 32.7 | 21.4 | 93 | 60 | 3 | 8 | ------ | Ω$^2$ a. ∞° p. |
| 11 | 33.7 | 22.3 | 96 | 61 | 4 | 7 | ------ | Ω$^2$ a. ∞° p. |
| 12 | 33.1 | 21.7 | 96 | 60 | 3 | 4 | ------ | Ω$^2$ a. |
| 13 | 33.7 | 22.8 | 94 | 61 | 2 | 5 | ------ | Ω a. [↯ p. |
| 14 | 34 | 22.9 | 94 | 56 | 5 | 4 | ------ | Ω° a. ⊎ ↯ p. |
| 15 | 32.6 | 23.4 | 93 | 66 | 5 | 3 | ------ | Ω a. ↯° p. |
| 16 | 32 | 23.9 | 94 | 61 | 3 | 3 | ------ | Ω a. [↯ p. |
| 17 | 33.4 | 22.5 | 94 | 64 | 4 | 4 | ------ | Ω a. [↯ p. |
| 18 | 33 | 22.7 | 94 | 62 | 2 | 6 | ------ | Ω a. [↯ p. |
| 19 | 35.4 | 22.3 | 96 | 55 | 3 | 3 | 22.9 | Ω a. ●$^2$ [↯ p. |
| 20 | 32.4 | 22.1 | 95 | 60 | 5 | 7 | 6.1 | Ω$^2$a. ⌒° [↯ ●° p. |
| 21 | 33.1 | 22.3 | 88 | 67 | 2 | 5 | 10.4 | ●$^2$ [↯ p. |
| 22 | 34 | 20.9 | 97 | 49 | 2 | 7 | ------ | ≡° Ω$^2$ a. [↯ p. |
| 23 | 33.8 | 20.8 | 92 | 55 | 3 | 8 | .5 | Ω a. d ↯ p. |
| 24 | 22.8 | 21 | 94 | 58 | 5 | 2 | ------ | Ω$^2$ a. ↯ p. |
| 25 | 33.1 | 22.5 | 90 | 55 | 2 | 4 | .8 | Ω a. [↯ ●° p. |
| 26 | 33.1 | 21.9 | 95 | 66 | 2 | 8 | ------ | Ω$^2$ a. ↯ p. |
| 27 | 32.9 | 23.5 | 91 | 59 | 3 | 8 | ------ | Ω°a. Ф° ∞° ↯°p |
| 28 | 33.8 | 23.2 | 95 | 60 | 3 | 5 | 2.8 | Ω$^2$ a. [↯° d$^2$ p. |
| 29 | 31.9 | 23 | 96 | 60 | 5 | 8 | ------ | Ω$^2$ a. |
| 30 | 32.5 | 22.2 | 92 | 55 | 4 | 7 | 10.7 | Ω$^2$ a. ●$^2$ [↯$^2$ p. |
| 31 | 32.3 | 22 | 97 | 60 | 10 | 10 | .5 | Ω$^2$ a. d [↯ p |
| Mean | 32.6 | 22.3 | 94.4 | 61.2 | 4.6 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 77.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 26.6 | 22.6 | 98 | 79 | 9 | 9 | 5.4 | ● d° a. |
| 2 | 27.8 | 23.2 | 94 | 75 | 10 | 7 | 12.7 | ● a. |
| 3 | 26.2 | 20.5 | 93 | 89 | 8 | 10 | 3.8 | Ω² d° a. p ●° p. |
| 4 | 26.3? | 22.9 | 95 | 88 | 8 | 9 | 4.6 | ● a. d ⌒² p. |
| 5 | 28 | 22.1? | 100 | 74 | 7 | 8 | ------ | Ω ≡² a. Ф p. |
| 6 | 27 | 22.3 | 97 | 95 | 7 | 8 | 39.4 | Ω² ●² a. Ф p. |
| 7 | 27.2 | 22.9 | 97 | 90 | 8 | 9 | 14.8 | Ω² a. ● a. p. |
| 8 | 27.6 | 22.6 | 97 | 93 | 7 | 7 | 12.2 | ≡ d° a. ● Γ↯° p. |
| 9 | 27.7 | 22.8 | 97 | 81 | 7 | 8 | 3.3 | p a. ѱ² p. |
| 10 | 28 | 20.7 | 96 | 86 | 7 | 9 | 8.9 | ● d Ф² p. |
| 11 | 28.1 | 20.6 | 95 | 65 | 5 | 4 | ------ | Ω² a. |
| 12 | 29 | 22.7 | 95 | 67 | 10 | 8 | .3 | Ω² a. ⊤ ●° ⌒ p. |
| 13 | 28.3 | 23.6 | 93 | 74 | 10 | 6 | 13.2 | Ω ● a. |
| 14 | 28.9 | 22.9 | 92 | 80 | 6 | 9 | 4.9 | Ω a. ● ⌒ d p. |
| 15 | 28.3 | 21.9 | 94 | 76 | 6 | 4 | 1.5 | Ω² a. |
| 16 | 28.5 | 23.6 | 94 | 76 | 7 | 6 | ------ | ● a. ↙° ↯ ⊤ d° p. |
| 17 | 27.6 | 22.9 | 93 | 86 | 3 | 9 | .6 | Ω ◯ a. ● p. |
| 18 | 29.6 | 21.9 | 97 | 71 | 6 | 7 | 3 | ≡ Ω a. ⊤ ● d p. |
| 19 | 29 | 22 | 96 | 71 | 2 | 6 | .3 | Ω² a. ⊤ ● p. |
| 20 | 29.1 | 22.4 | 95 | 74 | 7 | 7 | ------ | ≡ Ω² a. d° p. |
| 21 | 28 | 22.4 | 96 | 87 | 7 | 7 | 3.8 | Ω a. ● a. p. ↯ p. |
| 22 | 28.6 | 21.2 | 98 | 66 | 10 | 6 | ------ | Ω² ≡ a. ↯ p. |
| 23 | 27.8 | 20.6 | 95 | 74 | 3 | 7 | 1 | ≡ Ω ● a. ●° p. |
| 24 | 28.1 | 21.1 | 97 | 76 | 3 | 8 | .8 | ● a. p. d° p. |
| 25 | 29.4 | 21.7 | 96 | 70 | 9 | 7 | ------ | Ω a. d° ⊤ ↯ p. |
| 26 | 29.2 | 22 | 96 | 81 | 6 | 7 | 3 | Ω ⌒ a. ● ⊤ p. |
| 27 | 30.3 | 22.8 | 95 | 78 | 5 | 8 | 10.2 | Ω ●° a. ● p. |
| 28 | 30.3 | 22.6 | 95 | 67 | 6 | 7 | 7.4 | Ω² a. ● p. |
| 29 | 29.1 | 23.1 | 93 | 70 | 6 | 7 | .3 | Ω² a. ⊕ ●° ⌒ p. |
| 30 | 28.5 | 21.6 | 96 | 67 | 6 | 10 | .8 | ≡ Ω a. ●° p. |
| 31 | 28.1 | 22.9 | 97 | 84 | 8 | 8 | 5.6 | ● a. p. ⊤ p. |
| Mean | 28.3 | 22.2 | 95.5 | 77.7 | 6.7 | 7.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 161.8 |  |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | ------ | 24.1 | 79 | 76 | 10 | 10 | 0.8 | d² p. |
| 2 | ------ | 23.2 | 88 | 64 | 10 | 6 | ------ | Ω a. |
| 3 | ------ | 23.7 | 81 | 71 | 10 | 10 | ------ | Ω a. |
| 4 | ------ | 23.6 | 87 | 72 | 10 | 10 | 1.3 | Ω d a. ●° p. |
| 5 | ------ | 23.6 | 90 | 71 | 10 | 3 | ------ | d a. |
| 6 | ------ | 24.3 | 89 | 70 | 10 | 10 | 1.8 | Ω d a. Γ↯ ●° p. |
| 7 | ------ | 24.5 | 88 | 79 | 10 | 10 | ------ | Ω a. |
| 8 | ------ | 24.5 | 92 | 79 | 10 | 10 | 4.3 | Γ↯ ●° p. |
| 9 | ------ | 23.6 | 92 | 74 | 10 | 10 | 1.3 | ●° a ѱ² p. |
| 10 | ------ | 22.7 | 88 | 69 | 10 | 10 | ------ | Ω a. ◯ ѱ² p. |
| 11 | ------ | 21.7 | 86 | 76 | 10 | 10 | ------ | Ω a. |
| 12 | ------ | 22.2 | 90 | 68 | 10 | 9 | ------ | Ω a. |
| 13 | ------ | 24.4 | 87 | 68 | 10 | 6 | ------ | Ω ↯ a. |
| 14 | ------ | 24.2 | 90 | 73 | 10 | 10 | ------ | Ω a. |
| 15 | ------ | 22.7 | 86 | 73 | 8 | 4 | ------ | Ω a. |
| 16 | ------ | 23.3 | 88 | 70 | 10 | 3 | .5 | d a. Γ↯° ●° p. |
| 17 | ------ | 24.4 | 88 | 73 | 10 | 4 | 4.5 | ● a. p. ↯ ѱ° p. |
| 18 | ------ | 24.1 | 90 | 82 | 10 | 10 | ------ | Ω a. ◯ p. |
| 19 | ------ | 24.2 | 92 | 77 | 10 | 8 | .8 | Ω a. ↯° p. |
| 20 | ------ | 24.2 | 79 | 78 | 10 | 10 | ------ | ↯ a. ◯² p. |
| 21 | ------ | 24.8 | 85 | 82 | 10 | 10 | ------ | Ω a. ↯ p. |
| 22 | ------ | 24.3 | 90 | 72 | 10 | 4 | ------ |  |
| 23 | ------ | 23.2 | 89 | 67 | 10 | 7 | ------ | ѱ a. ◯ ↯ p. |
| 24 | ------ | 23.6 | 87 | 70 | 10 | 3 | ------ | Ω a. ↯ p. |
| 25 | ------ | 24.6 | 87 | 72 | 10 | 6 | ------ | d a. ⊕ ↯ p. |
| 26 | ------ | 24.7 | 86 | 73 | 10 | 6 | ------ | ѱ° a. ∞ p. |
| 27 | ------ | 23.5 | 88 | 73 | 10 | 9 | 1 | ◯ ↯ p. |
| 28 | ------ | 23.8 | 92 | 75 | 10 | 6 | ------ | d a. ↯ p. |
| 29 | ------ | 24.6 | 89 | 70 | 10 | 10 | ------ | d a. |
| 30 | ------ | 22.2 | 84 | 68 | 10 | 10 | ------ | Ω a. |
| 31 | ------ | 23.8 | 87 | 75 | 10 | 7 | ------ | Ω a. ⊕² p. |
| Mean | ------ | 23.8 | 87.5 | 72.9 | 9.9 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 16.3 |  |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.6 | 24.8 | 88 | 71 | 6 | 6 | 0.5 | d° a. d² p. |
| 2 | 30.4 | 24.5 | 90 | 73 | 6 | 8 | 1.8 | ● p. |
| 3 | 30.8 | 23.7 | 92 | 69 | 6 | 4 | 2.3 | ● a. ⌒° ●° p. |
| 4 | 30.8 | 24.3 | 88 | 71 | 6 | 4 | ------ | d° p. |
| 5 | 30.6 | 25.8 | 85 | 75 | 8 | 6 | ------ | ◯° a. |
| 6 | 31.1 | 25.2 | 91 | 72 | 8 | 6 | 8.7 | ●° ◯°a. ѱ●°Γ↯ |
| 7 | 27.4 | 23.6 | 94 | 78 | 10 | 10 | ------ | ● a. ѱ p. |
| 8 | 30.1 | 24.3 | 83 | 69 | 8 | 6 | ------ | ◯° a. ѱ° ↯° p. |
| 9 | 30.8 | 25.7 | 82 | 75 | 8 | 7 | 3.6 | ●° a.◯° a.p.ѱp. |
| 10 | 30.5 | 23.4 | 97 | 71 | 10 | 6 | .8 | ◯°↯°a.◯°●°ѱФ |
| 11 | 30.7 | 24.6 | 80 | 63 | 9 | 4 | ------ |  |
| 12 | 31.2 | 25.3 | 76 | 66 | 8 | 3 | 3.6 | d°a. p. ѱ° Ф° p. |
| 13 | 30.8 | 23.4 | 91 | 73 | 3 | 5 | ------ | ●°a. d° a. p.ѱp. |
| 14 | 31 | 25.3 | 82 | 70 | 6 | 6 | .5 | d° ⌒° p. |
| 15 | 31.1 | 25.4 | 84 | 69 | 6 | 6 | ------ | ѱ° Ф p. |
| 16 | 32.4 | 24.4 | 90 | 59 | 3 | 2 | ------ | Ω° a. ↯° p. |
| 17 | 31.9 | 24.3 | 91 | 65 | 3 | 6 | ------ | Ω° a. d° ↯ p. |
| 18 | 31 | 24.5 | 83 | 69 | 7 | 6 | 1.1 | d° ●° a. ↯°p. |
| 19 | 29 | 25 | 92 | 82 | 8 | 6 | 4.1 | d° ●° a. ◯° p. |
| 20 | 31.1 | 25 | 84 | 73 | 8 | 6 | 1.5 | d° a. ⊤° p. |
| 21 | 31 | 23.8 | 79 | 67 | 4 | 6 | ------ | ● a. ∞° ↯°p. |
| 22 | 30.3 | 24.6 | 84 | 75 | 9 | 8 | 2 | ѱ ◯ ●a. d°↯°p. |
| 23 | 31.2 | 25 | 84 | 62 | 4 | 6 | ------ | ◯°a. p. |
| 24 | 30.7 | 23.8 | 81 | 60 | 4 | 3 | 10.9 | d° a. ∞° ● p. |
| 25 | 27.9 | 23.6 | 81 | 80 | 9 | 9 | .3 | d° a. p. |
| 26 | 30.6 | 24.6 | 88 | 66 | 2 | 3 | ------ |  |
| 27 | 30.8 | 25.4 | 87 | 69 | 4 | 2 | ------ | d° p. |
| 28 | 30.8 | 26 | 80 | 64 | 5 | 5 | ------ |  |
| 29 | 32.2 | 25.5 | 81 | 62 | 6 | 8 | ------ | ◯° a. p. ↯° p. |
| 30 | 31.9 | 23.3 | 83 | 63 | 4 | 6 | 1.3 | ◯°⊕a. p. ↯°●°p. |
| 31 | 31.5 | 23.7 | 89 | 75 | 6 | 8 | 2.5 | d° a. p. |
| Mean | 30.7 | 24.6 | 85.8 | 69.5 | 6.3 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 45.5 |  |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30 | 22 | 91 | 75 | 10 | 10 | ------ | d ↯ p. |
| 2 | 29.9 | 21.5 | 89 | 66 | 10 | 10 | ------ | d° a. p. |
| 3 | 28 | 20.5 | 91 | 78 | 10 | 10 | ------ | d ↯ p. |
| 4 | 28.6 | 22.2 | 91 | 92 | 10 | 10 | ------ |  |
| 5 | 29.4 | 21.8 | 90 | 77 | 10 | 10 | ------ |  |
| 6 | 28.5 | 22.5 | 91 | 84 | 10 | 10 | 58.7 | ● a. ●² p. |
| 7 | 28.2 | 22.8 | 94 | 87 | 10 | 10 | 53.3 | d° ● ⊤ ↯° p. |
| 8 | ------ | 22.8 | 95 | 84 | 10 | 10 | ------ | ѱ² ↯ p. |
| 9 | 30.2 | 22.8 | 96 | 83 | 10 | 10 | 16.3 | ● p. |
| 10 | 30 | 21.8 | 95 | 71 | 10 | 10 | ------ | ѱ ↯ p. |
| 11 | 29.4 | 22 | 91 | 74 | 10 | 10 | ------ |  |
| 12 | 30.2 | 22.6 | 91 | 82 | 10 | 8 | ------ |  |
| 13 | 29.9 | 22.8 | 88 | 82 | 10 | 10 | ------ |  |
| 14 | 29.9 | 22.6 | 91 | 82 | 10 | 10 | 19.6 | ● a. |
| 15 | 30.6 | 21.5 | 93 | 72 | 10 | 10 | ------ | ѱ p. |
| 16 | 31 | 23 | 90 | 69 | 10 | 4 | 3.6 | d² ⊤² p. |
| 17 | 30.5 | 22 | 91 | 71 | 10 | 5 | ------ | ⌒² a. |
| 18 | 30.5 | 22.1 | 88 | 79 | 10 | 10 | 11.4 | ● ѱ ↯ p. |
| 19 | 30 | 22.2 | 91 | 79 | 10 | 8 | 17.3 | ↯ ѱ² ● p. |
| 20 | 30 | ------ | 87 | 80 | 10 | 10 | ------ |  |
| 21 | 30 | 22.6 | 93 | 82 | 10 | 10 | 12.4 | ● ↯ ѱ p. |
| 22 | 30.6 | 22 | 91 | 76 | 10 | 5 | ------ |  |
| 23 | 29.6 | 21.4 | 86 | 76 | 10 | 9 | ------ |  |
| 24 | 30.4 | 21.4 | 90 | 69 | 8 | 4 | ------ | ↯ d° p. |
| 25 | 30.4 | 21.4 | 90 | 76 | 10 | 6 | ------ |  |
| 26 | 30.8 | 21.7 | 93 | 78 | 10 | 8 | ------ |  |
| 27 | 30.1 | 21.4 | 91 | 83 | 10 | 8 | ------ | ⌒° a. ↯ p. |
| 28 | 30.4 | 22.7 | 92 | 75 | 10 | 5 | ------ | ↯ p. |
| 29 | 30.6 | ------ | 93 | 79 | 10 | 10 | ------ | ◯ a. |
| 30 | 29.8 | 21.9 | 84 | 82 | 10 | 9 | ------ |  |
| 31 | 30.6 | 22.2 | 88 | 78 | 10 | 10 | ------ | d° p. |
| Mean | 29.9 | 22.1 | 90.8 | 78.1 | 9.9 | 8.7 | ------ |  |
| Total | ----- | ------ | ------ | ------ | ------ | ------ | 192.6 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CUYO.

[$\phi=10° 51' N; \lambda=121° 01' E$]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28.7 | 24.5 | 81 | 75 | 9 | 9 | ------ | |
| 2 | 28.4 | 25 | 81 | 82 | 9 | 8 | ------ | |
| 3 | 28.5 | 24.6 | 85 | 75 | 9 | 9 | ------ | |
| 4 | 28.9 | 25 | 85 | 77 | 8 | 9 | ------ | |
| 5 | 30 | 25.4 | 89 | 76 | 8 | 7 | ------ | |
| 6 | 29.7 | 25.6 | 88 | 75 | 9 | 6 | ------ | |
| 7 | 29.4 | 26.1 | 86 | 74 | 9 | 8 | ------ | |
| 8 | 27.2 | 25.6 | 82 | 83 | 9 | 10 | ------ | d ⊖ p. |
| 9 | 28.3 | 24.7 | 84 | 79 | 9 | 9 | ------ | ⊍ p. |
| 10 | 30 | 25.3 | 91 | 76 | 9 | 7 | ------ | Ω a. |
| 11 | 29.8 | 25.6 | 89 | 76 | 10 | 5 | ------ | ⊖ p. |
| 12 | 30.1 | 24.4 | 88 | 72 | 9 | 7 | ------ | |
| 13 | 29.4 | 25.3 | 87 | 83 | 8 | 7 | ------ | ⊕ p. |
| 14 | 29.9 | 25.5 | 88 | 76 | 9 | 4 | ------ | ⊖ p. |
| 15 | 30 | 25.5 | 88 | 74 | 8 | 5 | ------ | ⚡ p. |
| 16 | 29.6 | 25.5 | 85 | 72 | 9 | 8 | ------ | |
| 17 | 30.4 | 25.3 | 86 | 71 | 9 | 6 | ------ | Ω a. |
| 18 | 29.2 | 25.5 | 87 | 74 | 9 | 8 | ------ | Ω a. |
| 19 | 29.9 | 25.8 | 85 | 67 | 9 | 4 | ------ | |
| 20 | 29.4 | 25.6 | 83 | 73 | 8 | 8 | ------ | ○ p. |
| 21 | 30.3 | 25.6 | 85 | 83 | 8 | 6 | ------ | |
| 22 | 29.7 | 25.8 | 85 | 75 | 9 | 7 | ------ | ⚡ p. |
| 23 | 29.6 | 25.6 | 85 | 71 | 9 | 4 | ------ | a. |
| 24 | 29.4 | 25.6 | 85 | 72 | 8 | 6 | ------ | ⚡ p. |
| 25 | 30.2 | 25.2 | 87 | 70 | 8 | 8 | ------ | ⊕ p. |
| 26 | 30.6 | 25.4 | 88 | 78 | 9 | 8 | ------ | |
| 27 | 30.2 | 25 | 94 | 73 | 9 | 8 | ------ | Ω a. ⚡ p. |
| 28 | 31.4 | 25.3 | 90 | 71 | 7 | 6 | ------ | Ω a. |
| 29 | 30.4 | 25.8 | 89 | 78 | 8 | 7 | ------ | Ω a. ⊕ p. |
| 30 | 30.8? | 25.2 | 91 | 67 | 9 | 8 | ------ | Ω a. |
| 31 | 31 | 24.4 | 87 | 71 | 8 | 6 | ------ | Ω a. |
| Mean | 29.7 | 25.3 | 86.6 | 74.8 | 8.6 | 7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### BORONGAN.

[$\phi=11° 37' N; \lambda=125° 26' E$]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28.7 | ------ | 98 | 70 | 9 | 6 | 0.6 | ● a. ○ ●° p. |
| 2 | 28.8 | 20.8 | 96 | 63 | 5 | 5 | ------ | Ω° ≡° ○ a. |
| 3 | 27 | 20 | 98 | 80 | 4 | 9 | 18.1 | Ω ≡ a. ● p. |
| 4 | 29.2? | 22.5 | 97 | 76 | 10 | 5 | 11.4 | ● a. ●° p. |
| 5 | 29.8 | 22.4 | 93 | 63 | 5 | 4 | .5 | ● a. ⚡ p. |
| 6 | 29.3 | 23.4 | 95 | 82 | 8 | 8 | 34.6 | ⌒ a. ● a. p. |
| 7 | 28.5 | 23.4 | 98 | 84 | 8 | 9 | 86.4 | ●² a. p. |
| 8 | 27.4 | 22.4 | 97 | 81 | 10 | 9 | 18 | ●² a. ● p. |
| 9 | 30 | 23.7 | 96 | 76 | 8 | 6 | .3 | ● a. ○ ⊍ d p. |
| 10 | 29.7 | 22.3 | 98 | 71 | 7 | 4 | ------ | Ω ≡ ○ a. |
| 11 | 29 | 20.8 | 97 | 75 | 3 | 4 | 3 | Ω ≡ a. ● p. |
| 12 | 29.4 | 22.5 | 97 | 74 | 4 | 5 | 34.8 | ≡ a. ● p. |
| 13 | 28.9 | 23.4 | 98 | 75 | 9 | 8 | 17.3 | ●² ⊤ a. ⊍ p. |
| 14 | ------ | 23.7? | 97 | 71 | 7 | 6 | .5 | ● a. ⚡ p. |
| 15 | 30 | 22.3 | 97 | 71 | 3 | 5 | ------ | Ω ≡ a. |
| 16 | 30 | 22 | 98 | 92 | 2 | 8 | 8.7 | Ω a. ● ⊤ ⊍ p. |
| 17 | 29.5 | 22.8 | 95 | 72 | 6 | 5 | 98.8 | Ω ⌒² ●° a. ●² p. |
| 18 | 25.4 | 23 | 96 | 94 | 10 | 9 | 36 | ●² a. ⊤ ● ⚡ p. |
| 19 | 28.2? | 22.7 | 98 | 73 | 8 | 5 | 23.4 | ⚡ p. |
| 20 | 28.3 | 22.4 | 97 | 79 | 10 | 7 | 4.8 | ●² a. |
| 21 | 29.6 | 22 | 98 | 80 | 7 | 6 | 6.6 | Ω ≡ a. ⌒ ● a. p. |
| 22 | 29.3 | 22 | 97 | 75 | 6 | 4 | .3 | ≡ ● a. ●° p. |
| 23 | 29.5 | 21.4 | 98 | 74 | 4 | 5 | 1.3 | Ω ≡ a. ● a. p. |
| 24 | 29.5 | 21 | 97 | 75 | 6 | 7 | 44.7 | ⌒ ● a. |
| 25 | 28.2? | 22 | 96 | 73 | 9 | 5 | 1 | ●² a. |
| 26 | 29.3? | 21.8 | 98 | 75 | 6 | 5 | 3.3 | Ω ≡ a. ●° p. |
| 27 | 29.6 | 21.4 | 98 | 77 | 2 | 5 | ------ | Ω° ≡ ○ a. ⚡ p. |
| 28 | 29.6 | 21.2 | 97 | 76 | 2 | 3 | 1.5 | Ω ≡ a. ⚡ ●° p. |
| 29 | 29.5 | 22.6 | 97 | 70 | 7 | 3 | .3 | ● a. |
| 30 | 30 | 20.5 | 92 | 69 | 4 | 4 | .8 | Ω ≡ a. ● p. |
| 31 | 30 | 22.2 | 97 | 71 | 6 | 5 | ------ | d ≡ a. |
| Mean | 29 | 22.2 | 96.8 | 75.4 | 6.3 | 5.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 457 | |

### MASBATE.

[$\phi=12° 22' N; \lambda=123° 36' E$]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 27.4 | 23.2 | ------ | ------ | 10 | 9 | 9.7 | |
| 2 | 28.6 | 22.7? | ------ | ------ | 9 | 9 | ------ | |
| 3 | 28.8 | 23.2 | ------ | ------ | 9 | 9 | 3 | |
| 4 | 27.6 | 24 | ------ | ------ | 10 | 10 | 8.9 | |
| 5 | 29 | 23.5 | ------ | ------ | 9 | 8 | ------ | |
| 6 | 28.2 | 23 | ------ | ------ | 5 | 8 | 2.1 | |
| 7 | 29.6 | 25.2 | ------ | ------ | 9 | 9 | 3.8 | |
| 8 | 27.8 | 23.2 | ------ | ------ | 10 | 10 | 11.7 | |
| 9 | 28.5 | 23.6 | ------ | ------ | 10 | 8 | ------ | |
| 10 | 30.2 | 23.5 | ------ | ------ | 9 | 4 | 8.6 | |
| 11 | 29.5 | 22.8 | ------ | ------ | 7 | 3 | .3 | |
| 12 | 29.8 | 22.2 | ------ | ------ | 6 | 4 | ------ | |
| 13 | 28.4 | 23.5 | ------ | ------ | 9 | 10 | 4.6 | |
| 14 | 30.2 | 23 | ------ | ------ | 9 | 6 | ------ | |
| 15 | 28.8 | 24.6 | ------ | ------ | 9 | 4 | 2.5 | |
| 16 | 28.8 | 24.5 | ------ | ------ | 10 | 8 | ------ | |
| 17 | 30.2 | 22.8 | ------ | ------ | 8 | 8 | ------ | |
| 18 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 19 | 28 | 23.6 | ------ | ------ | 9 | 8 | ------ | |
| 20 | ------ | 23.4 | ------ | ------ | 10 | 9 | ------ | |
| 21 | 28.6 | 23 | ------ | ------ | 9 | 10 | 12.4 | |
| 22 | ------ | 23 | ------ | ------ | 9 | 8 | 3.3 | |
| 23 | 28.8 | 23.6 | ------ | ------ | 9 | 9 | 2.5 | |
| 24 | 29.4 | 23.2 | ------ | ------ | 10 | 8 | .3 | |
| 25 | 29.5 | 22.6 | ------ | ------ | 9 | 6 | ------ | |
| 26 | 30.5 | 23.2 | ------ | ------ | 9 | 8 | ------ | |
| 27 | 30.8 | 23.6 | ------ | ------ | 8 | 8 | ------ | |
| 28 | 31 | 24.2? | ------ | ------ | 9 | 6 | ------ | |
| 29 | 30.4 | 23.8 | ------ | ------ | 8 | 8 | ------ | |
| 30 | 31 | 24.2 | ------ | ------ | 10 | 6 | ------ | |
| 31 | 31.2 | 23.8 | ------ | ------ | 8 | 6 | ------ | |
| Mean | 29.3 | 23.5 | ------ | ------ | 8.8 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 73.7 | |

### ROMBLON.

[$\phi=12° 35' N; \lambda=122° 16' E$]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 27.1 | 22.5 | 89 | 84 | 1 | 8 | 9.7 | ● a. p. |
| 2 | 27.8 | 22 | 96 | 69 | 1 | 4 | ------ | ● a. |
| 3 | 27.8 | 21.9 | 90 | 70 | 1 | 4 | 1 | |
| 4 | 27.2 | 22.3 | 91 | 92 | 6 | 10 | 26.7 | ● a. p. |
| 5 | 28 | 22.6 | 97 | 79 | 4 | 5 | ------ | |
| 6 | 28.3 | 23 | 98 | 81 | 4 | 8 | .5 | ●° p. |
| 7 | 29.5 | 24.4 | 86 | 69 | 5 | 3 | ------ | |
| 8 | 26.6 | 23.1 | 85 | 81 | 10 | 10 | 4.1 | ● p. |
| 9 | 27.6 | 23.3 | 93 | 82 | 10 | 7 | 7.9 | ● a. p. |
| 10 | 28.5 | 22.3 | 97 | 79 | 2 | 4 | ------ | ∞ p. |
| 11 | 28.8 | 22.1 | 97 | 75 | 5 | 3 | ------ | d a. |
| 12 | 28.8 | 22.6 | 91 | 75 | 1 | 6 | .3 | ● d a. |
| 13 | 29.1 | 24.3 | 92 | 80 | 2 | 5 | 5.6 | ● p. |
| 14 | 28.3 | 22.5 | 96 | 80 | 6 | 3 | ------ | |
| 15 | 28.6 | 23 | 93 | 74 | 5 | 1 | ------ | |
| 16 | 28.8 | 23.7 | 88 | 73 | 2 | 1 | ------ | |
| 17 | 29.6 | 23.3 | 81 | 65 | 1 | 1 | ------ | |
| 18 | 28.2 | 22 | 96 | 67 | 4 | 0 | ------ | |
| 19 | 29.6 | 22 | 89 | 71 | 4 | 4 | ------ | |
| 20 | 28.7 | 23.6 | 82 | 70 | 3 | 5 | ------ | |
| 21 | 29.5 | 24.5 | 81 | 68 | 10 | 2 | ------ | |
| 22 | 29.4 | 24.4 | 84 | 70 | 5 | 1 | ------ | |
| 23 | 29.3 | 23.6 | 92 | 69 | 5 | 1 | ------ | |
| 24 | 28.6 | 23.4 | 87 | 71 | 1 | 2 | ------ | ⚡° p. |
| 25 | 28.3 | 23.5 | 88 | 77 | 4 | 1 | ------ | d p. |
| 26 | 30 | 24.1 | 87 | 68 | 3 | 1 | ------ | |
| 27 | 29.2 | 23.3 | 94 | 81 | 6 | 7 | ------ | d a. |
| 28 | 30.3 | 22.2 | 96 | 71 | 9 | 1 | 7.4 | |
| 29 | 29.7 | 23.7 | 89 | 72 | 10 | 1 | 1.3 | ● a. |
| 30 | 30 | 23.5 | 91 | 68 | 3 | 1 | ------ | ● a. |
| 31 | 30.3 | 22.8 | 96 | 69 | 6 | 1 | ------ | |
| Mean | 28.8 | 23.1 | 90.7 | 74.2 | 4.5 | 3.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 64.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. ● |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29 | 23.8 | 87 | 70 | 8 | 6 | 2.5 | |
| 2 | 29.4 | 23.6 | 92 | 71 | 10 | 10 | ------ | |
| 3 | 27.2 | 24.8 | 92 | 92 | 10 | 10 | 7.7 | |
| 4 | 29 | 24.6 | 88 | 71 | 10 | 10 | ------ | |
| 5 | 27.6 | 25.8 | 84 | 83 | 6 | 10 | 19 | |
| 6 | 29 | 24 | 88 | 73 | 4 | 6 | ------ | |
| 7 | 29 | 23.2 | 83 | 64 | 6 | 2 | ------ | |
| 8 | 29.2 | 23.6 | 83 | 64 | 10 | 4 | ------ | |
| 9 | 28 | 23.8 | 84 | 82 | 3 | 8 | 1.3 | |
| 10 | 28 | 24.8 | 84 | 92 | 8 | 10 | 8.9 | |
| 11 | 28.8 | 24.4 | 84 | 68 | 10 | 5 | 3 | |
| 12 | 29.2 | 23 | 84 | 71 | 3 | 6 | ------ | |
| 13 | 29.2 | 22.8 | 84 | 71 | 5 | 5 | 1.3 | |
| 14 | 29.2 | 24.2 | 87 | 68 | 3 | 10 | ------ | |
| 15 | 29.6 | 24.8 | 84 | 71 | 3 | 10 | 2.5 | |
| 16 | 29.4 | 24 | 87 | 70 | 4 | 10 | ------ | |
| 17 | 29.6 | 23 | 84 | 70 | 8 | 10 | ------ | |
| 18 | 29.2 | 24.8 | 87 | 74 | 6 | 8 | ------ | |
| 19 | 29.2 | 23.6 | 84 | 68 | 6 | 4 | ------ | |
| 20 | 29.6 | 23.8 | 84 | 64 | 5 | 4 | 2.5 | |
| 21 | 28.6 | 23.6 | 85 | 70 | 3 | 7 | 2.5 | |
| 22 | 27.6 | 23.8 | 84 | 84 | 3 | 10 | 8.9 | |
| 23 | 29 | 24 | 88 | 69 | 10 | 10 | ------ | |
| 24 | 28.8 | 24 | 84 | 71 | ------ | 7 | ------ | |
| 25 | 29.4 | 24.2 | 84 | 64 | 6 | 5 | ------ | |
| 26 | 28.8 | 24.4 | 84 | 68 | 3 | 4 | ------ | |
| 27 | 29 | 25.2 | 84 | 69 | 6 | 5 | ------ | |
| 28 | 28 | 23.6 | 86 | 75 | 7 | 6 | 11.4 | |
| 29 | 29 | 23 | 84 | 68 | 4 | 10 | ------ | |
| 30 | 28.2 | 23.8 | 90 | 78 | 10 | 8 | 7.6 | |
| 31 | 28 | 23.8 | 84 | 77 | 10 | 10 | ------ | |
| Mean | 28.8 | 24 | 85.5 | 72.6 | 6.3 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 79.1 | |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29 | 21.5 | 95 | 68 | 10 | 10 | 0.8 | |
| 2 | 29.2 | 21.4 | 95 | 68 | 10 | 8 | ------ | |
| 3 | 29.5 | 20.6 | 98 | 61 | 10 | 10 | .6 | |
| 4 | 27.8 | 21.1 | 92 | 80 | 10 | 10 | 19.7 | p a. ● p. |
| 5 | 29.8 | 22 | 98 | 76 | 10 | 10 | 2.5 | ● d° a. |
| 6 | 29.1 | 24.5 | 92 | 82 | 10 | 10 | 2.5 | d° a. |
| 7 | 28.6 | 23.6 | 94 | 84 | 10 | 10 | 3.5 | ● d° a. p p. |
| 8 | 27.4 | 23 | 78 | 84 | 10 | 10 | 3.3 | p a. p. |
| 9 | 28.8 | 21.6 | 98 | 77 | 10 | 10 | .3 | ● a. d° a. p. |
| 10 | 29.6 | 22.1 | 96 | 73 | 10 | 6 | ------ | d° a. |
| 11 | 29.1 | 21.5 | 96 | 75 | 10 | 2 | 10.7 | ● p. |
| 12 | 28.5 | 22.4 | 99 | 77 | 10 | 10 | .5 | d° a. p p. |
| 13 | 28.5 | 23.6 | 91 | 77 | 10 | 10 | ------ | |
| 14 | 30 | 22.1 | 89 | 71 | 10 | 2 | ------ | |
| 15 | 29.6 | 21.6 | 97 | 72 | 10 | 2 | ------ | |
| 16 | 28.4 | 24 | 84 | 74 | 10 | 5 | ------ | Φ ψ p. |
| 17 | 29 | 21.6 | 97 | 70 | 7 | 2 | ------ | Ω a. ψ Φ p. |
| 18 | 29.5 | 20.1 | 94 | 70 | 3 | 2 | ------ | |
| 19 | 29.6 | 20.6 | 95 | 70 | 9 | 8 | ------ | |
| 20 | 29.6 | 20.5 | 95 | 72 | 10 | 8 | 6.4 | ● a. |
| 21 | 29.7 | 20.5 | 92 | 71 | 10 | 2 | ------ | |
| 22 | 28.8 | 23 | 96 | 71 | 10 | 10 | ------ | |
| 23 | 28.6 | 23.5 | 83 | 70 | 10 | 8 | 2.5 | p p. |
| 24 | 28.1 | 22.9 | 89 | 77 | 10 | 10 | 11.2 | ● p. |
| 25 | 27.9 | 22.4 | 87 | 77 | 10 | 7 | ------ | |
| 26 | 28.6 | 22.6 | 98 | 76 | 10 | 2 | .8 | ⌒° ● a. p p. |
| 27 | 29.7 | 21.5 | 95 | 71 | 10 | 2 | ------ | |
| 28 | 29.6 | 22.1 | 95 | 74 | 9 | 3 | ------ | |
| 29 | 29.5 | 23 | 97 | 74 | 10 | 8 | ------ | |
| 30 | 29.8 | 24 | 93 | 63 | 10 | 7 | ------ | d° a. |
| 31 | 29.6 | 22.1 | 95 | 76 | 10 | 3 | ------ | |
| Mean | 29 | 22.2 | 93.3 | 73.6 | 9.6 | 6.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 65.3 | |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.1 | 22 | 87 | 66 | 9 | 7 | ------ | ● a. |
| 2 | 29.8 | 19.2 | 95 | 65 | 7 | 7 | ------ | Ω² a. |
| 3 | 30.9 | 19.4 | 92 | 62 | 5 | 8 | 3 | Ω a. ●° p. |
| 4 | 28.5 | 23.1 | 85 | 75 | 10 | 9 | 24.4 | ● a. p. ↙° p. |
| 5 | 30.2 | 22.4 | 99 | 72 | 7 | 7 | 3.5 | ⌒ ● a. |
| 6 | 31.2 | 22.4 | 98 | 68 | 8 | 7 | 1.3 | ⌒ a. d a. p. |
| 7 | 31.4 | 23 | 82 | 64 | 6 | 8 | 1.5 | |
| 8 | 30 | 22.8 | 86 | 67 | 9 | 9 | 9.4 | ●° a. |
| 9 | 28.4 | 23.5 | 97 | 91 | 10 | 9 | 25.2 | ● a. p. d p. |
| 10 | 30 | 21.5 | 98 | 75 | 6 | 4 | ------ | Ω ⌒ a. |
| 11 | 30.3 | 20.5 | 95 | 72 | 2 | 4 | ------ | Ω² a. |
| 12 | 30 | 19.7 | 97 | 71 | 4 | 6 | 13.2 | Ω² a. ● p. |
| 13 | 30.6 | 22.5 | 94 | 69 | 9 | 8 | 1.6 | d a. |
| 14 | 30.3 | 22.5 | 81 | 72 | 5 | 5 | ------ | ●° a. d° p. |
| 15 | 31.7 | 21.5 | 96 | 63 | 4 | 4 | 2.3 | ●° p. |
| 16 | 29 | 23 | 93 | 78 | 9 | 8 | .3 | ●° d a. |
| 17 | 30 | 20.5 | 95 | 69 | 4 | 4 | 1.3 | |
| 18 | 30.2 | 21.5 | 96 | 75 | 7 | 6 | 5.1 | ●° a. p. |
| 19 | 29 | 22.2 | 93 | 70 | 7 | 8 | .3 | d a. |
| 20 | 30 | 23 | 77 | 70 | 6 | 9 | 1.3 | d p. |
| 21 | 29.2 | 22 | 95 | 71 | 9 | 8 | 29.7 | ● ⌒° a. |
| 22 | 28.8 | 21.9 | 95 | 76 | 10 | 8 | 5.6 | ●² a. < p. |
| 23 | 29.3 | 22 | 91 | 78 | 8 | 9 | 3.6 | ●° a. d a. p. < p. |
| 24 | 29.6 | 21 | 96 | 72 | 8 | 6 | 6.1 | ⌒ ● a |
| 25 | 29.8 | 20.9 | 95 | 70 | 8 | 7 | 17.3 | d° ● a. |
| 26 | 30.5 | 22 | 98 | 80 | 8 | 8 | 25.1 | ⌒ a. ● a. p. |
| 27 | 30.3 | 22.2 | 98 | 71 | 8 | 4 | ------ | ● a. |
| 28 | 30.4 | 21.5 | 96 | 90 | 4 | 8 | 2.8 | ● a. p, d ⊤ p. |
| 29 | 30.6 | 20.9 | 98 | 74 | 4 | 5 | 2.3 | Ω ⊕ ○ a. |
| 30 | 30.4 | 22 | 97 | 75 | 7 | 6 | 1.6 | ●° a. p. |
| 31 | 30.5 | 21.5 | 96 | 72 | 7 | 5 | ------ | Ω² a. |
| Mean | 30 | 21.7 | 93.3 | 72.4 | 6.9 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 187.8 | |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.5 | 21.5 | 95 | 75 | 9 | 8 | ------ | |
| 2 | 29.4 | 17.6 | 99 | 60 | 6 | 8 | ------ | |
| 3 | 30 | 17 | 99 | 66 | 5 | 8 | ------ | |
| 4 | 28.8 | 19.3 | 91 | 87 | 9 | 10 | 5.4 | ●° p. |
| 5 | 29.9 | 21.3 | 98 | 78 | 10 | 8 | ------ | d ≡° a. |
| 6 | 27.7 | 20.9 | 98 | 90 | 6 | 9 | 8.9 | ⌒ ●° a. |
| 7 | 30 | 21.6 | 93 | 73 | 7 | 8 | 1.7 | |
| 8 | 27.5 | 21.9 | 98 | 86 | 10 | 9 | 4.5 | d a. ●° a. p. |
| 9 | 26.6 | 22.5 | 93 | 87 | 8 | 10 | 7.7 | ●° a. d p. |
| 10 | 30.2 | 21.2 | 98 | 70 | 10 | 5 | ------ | ≡° a. |
| 11 | 30.2 | 20.4 | 99 | 70 | 10 | 6 | 1.5 | ≡° a. d p. |
| 12 | 28.9 | 21 | 98 | 88 | 10 | 10 | .6 | d a. p. |
| 13 | 28.9 | 21.5 | 93 | 86 | 9 | 9 | ------ | |
| 14 | 30.7 | 20.5 | 99 | 69 | 10 | 8 | ------ | ≡° a. |
| 15 | 30.1 | 21 | 98 | 79 | 5 | 8 | 1.8 | |
| 16 | 29.5 | 22 | 95 | 63 | 6 | 6 | ------ | d² a. |
| 17 | 31.8 | 18 | 97 | 61 | 10 | 5 | ------ | |
| 18 | 30.5 | 19 | 98 | 69 | 10 | 5 | ------ | Ω ∞ a. |
| 19 | 30 | 22.3 | 93 | 68 | 7 | 9 | ------ | |
| 20 | 30 | 21.8 | 88 | 66 | 4 | 9 | ------ | |
| 21 | 29.5 | 21.7 | 95 | 67 | 9 | 8 | .3 | d p. |
| 22 | 29.9 | 21.7 | 97 | 68 | 9 | 9 | .3 | d p. |
| 23 | 29.7 | 21.2 | 93 | 74 | 7 | 8 | ------ | |
| 24 | 28.5 | 19.5 | 98 | 78 | 8 | 9 | ------ | |
| 25 | 28.9 | 20 | 98 | 73 | 3 | 7 | ------ | |
| 26 | 30.7 | 19 | 97 | 69 | 5 | 7 | 5.8 | ●° ⌐↘ p. |
| 27 | 31.5 | 19.7 | 99 | 63 | 6 | 7 | ------ | ≡° Ω a. |
| 28 | 30.4 | 20.3 | 98 | 73 | 3 | 8 | 3.2 | ●° p. |
| 29 | 31.5 | 19.7 | 99 | 68 | 3 | 8 | ------ | ≡° a. |
| 30 | 31.8 | 19 | 99 | 73 | 3 | 8 | 5.4 | ≡° a. ●° ⌒ p. |
| 31 | 32.5 | 20.8 | 98 | 70 | 8 | 8 | ------ | |
| Mean | 29.8 | 20.5 | 96.5 | 73.1 | 7.3 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 47.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 30.8 | 19.2 | 94 | 62 | 4 | 5 | ------ | |
| 2 | 31.9 | 20.3 | 95 | 60 | 5 | 4 | ------ | |
| 3 | 30.5 | 19.4 | 96 | 58 | 4 | 5 | ------ | Ω a. |
| 4 | 30 | 18.6 | 96 | 69 | 4 | 6 | ------ | ≡° Ω a. |
| 5 | 30.4 | 22.3 | 97 | 69 | 9 | 6 | 1.8 | ●° d p. |
| 6 | 31.7 | 22.1 | 97 | 79 | 5 | 7 | 4.5 | ● a. p. |
| 7 | 29 | 21.3 | 92 | 73 | 7 | 7 | ------ | |
| 8 | 31.2 | 20.3 | 88 | 67 | 5 | 7 | ------ | |
| 9 | 31.4 | 19.4 | 92 | 65 | 6 | 6 | ------ | ⊕ p. |
| 10 | 31.6 | 20 | 96 | 69 | 4 | 5 | ------ | |
| 11 | 32 | 20.3 | 95 | 61 | 3 | 3 | ------ | |
| 12 | 29.7 | 21.2 | 95 | 70 | 4 | 7 | ------ | |
| 13 | 32 | 21 | 95 | 66 | 1 | 7 | ------ | |
| 14 | 31.1 | 21.7 | 97 | 67 | 1 | 4 | ------ | |
| 15 | 31.4 | 20.5 | 96 | 65 | 3 | 4 | ------ | |
| 16 | 31 | 21.1 | 96 | 64 | 3 | 7 | ------ | |
| 17 | 32.8 | 20 | 97 | 54 | 3 | 3 | ------ | |
| 18 | 31 | 18.6 | 95 | 64 | 3 | 3 | ------ | |
| 19 | 31.1 | 19.4 | 95 | 64 | 5 | 6 | ------ | |
| 20 | 31 | 19.6 | 96 | 75 | 4 | 7 | 1.3 | ● p. |
| 21 | 32.6 | 21.3 | 93 | 54 | 6 | 4 | ------ | |
| 22 | 32.8 | 19.8 | 93 | 57 | 7 | 7 | ------ | |
| 23 | 32 | 21.6 | 91 | 68 | 7 | 7 | ------ | ⊤ < p. |
| 24 | 31.7 | 19.6 | 95 | 69 | 7 | 7 | 9.1 | ●° a. p. |
| 25 | 30.5 | 20.7 | 95 | 66 | 9 | 6 | ------ | ●° a. |
| 26 | 32 | 20.6 | 95 | 57 | 1 | 3 | ------ | |
| 27 | 31 | 20.1 | 95 | 67 | 1 | 3 | ------ | |
| 28 | 33 | 21.2 | 95 | 62 | 2 | 4 | ------ | |
| 29 | 33.8 | 21 | 96 | 50 | 4 | 5 | ------ | |
| 30 | 33.6 | 22.1 | 91 | 53 | 4 | 5 | ------ | Γ a. |
| 31 | 33.3 | 21.4 | 95 | 58 | 3 | 4 | ------ | |
| Mean | 31.5 | 20.5 | 94.6 | 63.9 | 4.3 | 5.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 16.7 | |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 27.5 | 19.1 | 98 | 73 | 2 | 2 | ------ | |
| 2 | 27.7 | 17.8 | 98 | 73 | 7 | 5 | ------ | |
| 3 | 29.3 | 18.1 | 98 | 68 | 3 | 4 | ------ | Ω ≡ a. |
| 4 | 29.5 | 19 | 98 | 69 | 5 | 9 | ------ | p° a. |
| 5 | 29.9 | 19.6 | 97 | 67 | 2 | 3 | 0.8 | ● p. |
| 6 | 30.5 | 19.1 | 98 | 67 | 7 | 5 | ------ | |
| 7 | 30 | 19.2 | 98 | 67 | 2 | 7 | ------ | Ω ≡ a. |
| 8 | 30.1 | 19.5 | 97 | 67 | 5 | 3 | ------ | ≡ a. |
| 9 | 29.8 | 18 | 98 | 66 | 7 | 8 | ------ | p° p. |
| 10 | 30 | 18.9 | 98 | 67 | 10 | 5 | ------ | Ω ≡ a. |
| 11 | 30.6 | 18.1 | 97 | 66 | 2 | 2 | ------ | |
| 12 | 30.3 | 17.6 | 97 | 67 | 7 | 4 | ------ | |
| 13 | 30.8 | 17.2 | 98 | 66 | 5 | 8 | ------ | Ω ≡ a. |
| 14 | 31 | 17 | 97 | 66 | 2 | 9 | ------ | |
| 15 | 30.5 | 17.9 | 98 | 66 | 4 | 7 | ------ | |
| 16 | 30.6 | 18.8 | 98 | 65 | 7 | 5 | ------ | |
| 17 | 30.9 | 18.6 | 98 | 65 | 8 | 8 | ------ | Ω ≡ a. |
| 18 | 31.1 | 17.8 | 97 | 65 | 2 | 3 | ------ | |
| 19 | 30.3 | 18.2 | 97 | 66 | 7 | 5 | ------ | |
| 20 | 30 | 18.8 | 98 | 67 | 2 | 8 | ------ | p° p. |
| 21 | 29.5 | 18.7 | 98 | 68 | 2 | 6 | ------ | |
| 22 | 29.7 | 17.6 | 98 | 69 | 3 | 5 | ------ | Ω ≡ a. |
| 23 | 29.4 | 17.9 | 97 | 69 | 7 | 8 | ------ | |
| 24 | 29 | 18.3 | 97 | 63 | 2 | 6 | 3.8 | ● p. |
| 25 | 28.8 | 19 | 98 | 69 | 10 | 9 | 4.8 | Ω a. ● p. |
| 26 | 27.6 | 18.4 | 98 | 70 | 2 | 7 | ------ | |
| 27 | 29.5 | 19.5 | 97 | 68 | 5 | 5 | ------ | |
| 28 | 31 | 19.9 | 98 | 64 | 7 | 8 | ------ | Ω ≡ a. |
| 29 | 31.3 | 20 | 98 | 62 | 2 | 4 | ------ | Ω ≡ a. |
| 30 | 31.6 | 20.4 | 98 | 62 | 7 | 8 | ------ | Γ a. |
| 31 | 31.7 | 20.7 | 98 | 62 | 2 | 2 | ------ | |
| Mean | 30 | 18.7 | 97.7 | 66.7 | 4.7 | 5.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 9.4 | |

### STA. CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 28.6 | 21.6 | 88 | 70 | 8 | 6 | ------ | Ω a. |
| 2 | 29.9 | 20 | 97 | 62 | 8 | 3 | ------ | Ω a. |
| 3 | 30.3 | 19.1 | 97 | 60 | 8 | 8 | ------ | Ω a. |
| 4 | 29.4 | 20.1 | 96 | 75 | 8 | 8 | 2 | Ω$^2$ ⌒° a. ●° a. p. |
| 5 | 29.7 | 21.6 | 98 | 73 | 9 | 5 | ------ | ≡ a. d < p. |
| 6 | 30.3 | 21.8 | 99 | 88 | 6 | 9 | 3.6 | Ω a. ●° a. p. d p. |
| 7 | 29.4 | 22 | 95 | 73 | 9 | 7 | 1 | ● d a. p. ● ↙° ⊕ |
| 8 | 28.8 | 21.9 | 84 | 75 | 9 | 8 | ------ | d a. p. ⊕ p. |
| 9 | 28.8 | 23.1 | 83 | 67 | 9 | 5 | ------ | |
| 10 | 31 | 21.2 | 98 | 73 | 9 | 6 | ------ | Ω a. |
| 11 | 30.9 | 21.1 | 97 | 69 | 6 | 2 | ------ | Ω a. |
| 12 | 31 | 22.4 | 88 | 74 | 9 | 9 | 1.3 | ● a. |
| 13 | 29.2 | 22.7 | 86 | 76 | 9 | 9 | 1 | Ω° d a. |
| 14 | 28.7? | 21.9 | 98 | 67 | 9 | 3 | ------ | ≡ ●° d a. |
| 15 | 30.3 | 20.2 | 99 | 65 | 2 | 5 | ------ | Ω ≡ a. |
| 16 | 31.3 | 21.8 | 92 | 70 | 9 | 4 | ------ | Ω a. |
| 17 | 29.7 | 20.6 | 94 | 64 | 2 | 3 | ------ | Ω a. |
| 18 | 30.1 | 19.6 | 99 | 62 | 7 | 2 | ------ | Ω$^2$ ≡ a. |
| 19 | 30.9 | 19.7 | 99 | 68 | 8 | 7 | ------ | Ω ≡° d a. |
| 20 | 29.8 | 20 | 97 | 75 | 5 | 8 | ------ | Ω ≡° d a. |
| 21 | 28.8? | 22.1 | 89 | 64 | 7 | 3 | ------ | Ω° a. < p. |
| 22 | 30.8 | 20.8 | 95 | 78 | 3 | 8 | ------ | Ω a. d p. |
| 23 | 29.4 | 21.1 | 92 | 71 | 9 | 9 | ------ | Ω d a. < p. |
| 24 | 29 | 20.6 | 89 | 76 | 9 | 9 | 30.2 | Ω a. d a. p. ●$^2$ p. |
| 25 | 28.4 | 21.1 | 91 | 77 | 9 | 8 | 11.9 | ● a. p. ⌒° d p. |
| 26 | ------ | 21.2 | 93 | 68 | 9 | 7 | ------ | |
| 27 | 30.6 | 20.1 | 99 | 67 | 1 | 2 | ------ | Ω ∞ a. < p. |
| 28 | 30.8? | 21.1 | 97 | 66 | 4 | 4 | ------ | Ω a. |
| 29 | 31.7 | 21.6 | 94 | 72 | 2 | 4 | ------ | Ω a. d < p. |
| 30 | 30 | 21.6 | 91 | 70 | 7 | 8 | ------ | Γ a. |
| 31 | 31.4 | 21 | 97 | 67 | 2 | 4 | ------ | Ω a. |
| Mean | 30 | 21.1 | 93.9 | 70.4 | 6.8 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 51 | |

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 30 | 19 | 88 | 71 | 1 | 8 | 6.1 | ∞ p$^2$ p. |
| 2 | 29.7 | 18.4 | 91 | 65 | 3 | 7 | ------ | |
| 3 | 29.8 | 17.5 | 98 | 53 | 2 | 6 | ------ | Ω$^2$ a. |
| 4 | 30.5 | 18.5 | 91 | 66 | 1 | 9 | 1.3 | Ω$^2$ a. ⌒ d° p. |
| 5 | 30.6 | 20.3 | 96 | 78 | 7 | 9 | 1.4 | ⊤ d p. |
| 6 | 30.7 | 21.3 | 97 | 62 | 4 | 6 | ------ | ⌒ a. |
| 7 | 30.1 | 20.4 | 95 | 66 | 6 | 7 | ------ | Ω° ≡° a. ⊕ p. |
| 8 | 30.7 | 18.9 | 93 | 56 | 5 | 3 | ------ | ∞ p. |
| 9 | 29.9 | 19.4 | 89 | 70 | 2 | 8 | ------ | Ω$^2$ a. ∞ p. |
| 10 | 31.9 | 19.8 | 95 | 66 | 2 | 6 | ------ | Ω$^2$ ≡° a. ⊤ p. |
| 11 | 30.2 | 21.1 | 92 | 73 | 9 | 8 | ------ | d° p. |
| 12 | 30.8 | 20.9 | 93 | 58 | 9 | 5 | ------ | Ω° a. ∞ p. |
| 13 | 31.2 | 20 | 91 | 60 | 3 | 7 | ------ | Ω$^2$ a. |
| 14 | 30.8 | 20.8 | 93 | 65 | 8 | 7 | 1 | d° ⌒ p. |
| 15 | 30.4 | 19.6 | 94 | 72 | 7 | 6 | ------ | Ω° a. |
| 16 | 30.8 | 19.9 | 90 | 52 | 4 | 2 | ------ | |
| 17 | 29.4 | 18.4 | 90 | 70 | 1 | 7 | ------ | Ω$^2$ a. |
| 18 | 31.9 | 18.8 | 95 | 47 | 1 | 3 | ------ | Ω° ≡° a. ∞ p. |
| 19 | 30.2 | 19.1 | 95 | 68 | 2 | 6 | ------ | Ω$^2$ ≡° a. ⌒ p. |
| 20 | 28.9 | 18.6 | 91 | 73 | 9 | 6 | 0.3 | Ω° a. d° a. p. |
| 21 | 30.4 | 19.6 | 86 | 63 | 8 | 6 | ------ | Ω° a. ∞ p. |
| 22 | 31.4 | 20.1 | 89 | 52 | 7 | 4 | ------ | ⊕ a. ∞$^2$ p. |
| 23 | 29.8 | 20.1 | 94 | 59 | 8 | 9 | ------ | < p. |
| 24 | 30.4 | 19.5 | 93 | 60 | 4 | 8 | 8.4 | Ω$^2$ a. d$^2$ p. |
| 25 | 28.9 | 19.6 | 97 | 79 | 8 | 9 | ------ | ≡ a. |
| 26 | 31.2 | 19.8 | 89 | 66 | 2 | 5 | ------ | Ω$^2$ a. d° ∞ p. |
| 27 | 31.2 | 19.8 | 95 | 60 | 1 | 4 | ------ | Ω$^2$ ≡° a. ∞ p. |
| 28 | 31.6 | 20.5 | 94 | 62 | 1 | 4 | ------ | Ω$^2$ a. Γ p. |
| 29 | 33.1 | 19.3 | 91 | 63 | 1 | 6 | ------ | Ω$^2$ a. |
| 30 | 32.7 | 20.3 | 82 | 59 | 3 | 5 | ------ | |
| 31 | 32.3 | 20.2 | 91 | 55 | 2 | 2 | ------ | Ω° a. |
| Mean | 30.7 | 19.7 | 92.2 | 63.5 | 4.2 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 18.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.6 | 18.4 | 87 | 61 | 2 | 7 | ------ |  |
| 2 | 30.8 | 17.9 | 96 | 64 | 4 | 8 | ------ | ≡° a. |
| 3 | 29.8 | 17.5 | 94 | 58 | 4 | 7 | ------ |  |
| 4 | 29.9 | 17.3 | 96 | 64 | 3 | 5 | ------ | ≡° a. |
| 5 | 30.9 | 21.5 | 92 | 67 | 9 | 3 | ------ |  |
| 6 | 31 | 21.1 | 95 | 71 | 5 | 4 | ------ | ≡° a. d p. |
| 7 | 30.8 | 18.6 | 95 | 65 | 1 | 4 | ------ | ≡° a. |
| 8 | 32 | 21 | 71 | 58 | 8 | 10 | ------ | ○ p. |
| 9 | 30.1 | 17.2 | 91 | 63 | 1 | 8 | ------ | ○ a. p. |
| 10 | 31.4 | 18.7 | 96 | 66 | 8 | 3 | ------ | ≡° a. d p. |
| 11 | 31 | 22.5 | 90 | 64 | 10 | 3 | ------ | ⊕° p. |
| 12 | 32.1 | 21.1 | 96 | 58 | 10 | 9 | ------ | d p. |
| 13 | 33 | 20 | 81 | 62 | 4 | 8 | ------ | ⌽° p. |
| 14 | 31 | 18.3 | 95 | 62 | 8 | 6 | ------ |  |
| 15 | 31.3 | 19.2 | 98 | 63 | 2 | 2 | ------ | ≡ a. |
| 16 | 30.8 | 20.4 | 95 | 64 | 8 | 4 | ------ | ≡° a. |
| 17 | 30 | 18.5 | 95 | 58 | 1 | 2 | ------ | ≡° a. |
| 18 | 31.2 | 18 | 98 | 61 | 5 | 4 | ------ | ≡ a. |
| 19 | 31.5 | 17 | 98 | 58 | 2 | 2 | ------ | ≡ a. |
| 20 | 30.8 | 17 | 98 | 57 | 4 | 8 | ------ | ≡ a. |
| 21 | 30.6 | 17.5 | 96 | 63 | 2 | 4 | ------ | ≡° a. |
| 22 | 31.5 | 19.4 | 96 | 63 | 6 | 9 | 9.9 | ≡° a. ● ☈ p. |
| 23 | 30.2 | 19.2 | 97 | 70 | 4 | 10 | ------ | ≡ a. d ☈ p. |
| 24 | 30 | 18.9 | 97 | 60 | 4 | 9 | ------ | ≡ a. |
| 25 | 31.5 | 20.7 | 85 | 61 | 10 | 8 | ------ |  |
| 26 | 32 | 19.8 | 91 | 62 | 1 | 2 | ------ |  |
| 27 | 30.5 | 19 | 96 | 66 | 2 | 1 | ------ | ≡° a. |
| 28 | 30.8 | 17.1 | 97 | 58 | 0 | 1 | ------ | ≡ Ω° a. |
| 29 | 30.9 | 18.6 | 97 | 65 | 3 | 2 | ------ | ≡ Ω a. ∞ p. |
| 30 | 31.5 | 18.9 | 90 | 61 | 6 | 9 | ------ | ⊕ a. p. ∞ p. |
| 31 | 30.9 | 19.1 | 95 | 65 | 4 | 2 | ------ | ≡° a. ⊕ p. |
| Mean | 31 | 19 | 93.4 | 62.5 | 4.5 | 5.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 9.9 |  |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.6 | 17.8 | 95 | 48 | 2 | 4 | ------ | Ω a. |
| 2 | 33 | 19 | 94 | 47 | 2 | 4 | ------ | Ω a. |
| 3 | 32.5 | 18 | 95 | 58 | 3 | 4 | ------ | Ω a. |
| 4 | 33.1 | 19 | 95 | 52 | 3 | 4 | ------ | Ω a. |
| 5 | 34.6 | 20.8 | 92 | 45 | 8 | 4 | ------ | Ω a. |
| 6 | 35 | 22.4 | 96 | 46 | 4 | 8 | ------ | Ω ≡° a. |
| 7 | 34 | 19.5 | 96 | 44 | 3 | 4 | ------ | Ω a. |
| 8 | 32.3 | 18.1 | 93 | 49 | 4 | 4 | ------ | Ω a. |
| 9 | 33.7 | 18.1 | 89 | 49 | 3 | 9 | ------ | Ω a. |
| 10 | 33.8 | 20.1 | 95 | 43 | 8 | 1 | ------ | Ω a. |
| 11 | 34.5 | 22.5 | 94 | 45 | 9 | 2 | ------ | Ω a. d° p. |
| 12 | 31.6 | 23 | 95 | 59 | 10 | 9 | ------ |  |
| 13 | 33.6 | 19.8 | 91 | 47 | 4 | 4 | ------ | Ω a. |
| 14 | 34.8 | 20.1 | 92 | 52 | 4 | 9 | ------ | Ω a. |
| 15 | 33.3 | 20.8 | 92 | 49 | 10 | 3 | ------ | Ω a. |
| 16 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 17 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 18 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 19 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 20 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 21 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 22 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 23 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 24 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 27 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 28 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 31 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| Mean | 33.5 | 19.9 | 93.6 | 48.9 | 5.1 | 4.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.9 | 20.1 | 93 | 67 | 2 | 3 | 0.8 | Ω° a. |
| 2 | 29.3 | 21 | 94 | 66 | 1 | 1 | ------ | ●° a. |
| 3 | 29.8 | 19.4 | 92 | 64 | 1 | 1 | ------ | Ω° a. |
| 4 | 30.6 | 18.7 | 99 | 68 | 2 | 2 | ------ | Ω° ≡² a. |
| 5 | 30.1 | 20 | 92 | 64 | 5 | 1 | ------ |  |
| 6 | 30.5 | 21.9 | 93 | 73 | 1 | 2 | ------ |  |
| 7 | 30.4 | 20 | 94 | 68 | 2 | 2 | ------ | Ω° a. |
| 8 | 29 | 19.2 | 93 | 71 | 3 | 6 | ------ | ⩛² p. |
| 9 | 29.6 | 18.2 | 92 | 63 | 1 | 1 | ------ | Ω° a. |
| 10 | 29.6 | 21.5 | 85 | 69 | 1 | 1 | ------ | Ω° a. |
| 11 | 30.1 | 20.8 | 87 | 69 | 1 | 1 | ------ | Ω² a. |
| 12 | 29.8 | 19.8 | 92 | 69 | 1 | 2 | ------ |  |
| 13 | 30.4 | 19.7 | 91 | 69 | 2 | 1 | ------ | Ω° a. |
| 14 | 30 | 20 | 98 | 71 | 1 | 2 | ------ | Ω° a. |
| 15 | 30.2 | 21.6 | 88 | 68 | 1 | 2 | ------ | Ω° a. |
| 16 | 30.6 | 21 | 92 | 70 | 2 | 1 | ------ | Ω° a. |
| 17 | 29.6 | 20.5 | 90 | 70 | 1 | 1 | ------ | Ω° a. |
| 18 | 28.6 | 19.8 | 95 | 73 | 1 | 1 | ------ | Ω° a. |
| 19 | 28.9 | 19.5 | 94 | 73 | 4 | 6 | ------ | Ω° a. |
| 20 | 29.7 | 19.5 | 83 | 70 | 1 | 2 | ------ | Ω° a. |
| 21 | 29.6 | 19 | 90 | 70 | 1 | 2 | ------ | Ω° a. |
| 22 | 28.9 | 21.9 | 89 | 72 | 6 | 1 | ------ |  |
| 23 | 29.6 | 20.9 | 91 | 77 | 1 | 1 | ------ | Ω° a. |
| 24 | 30.2 | 19.2 | 96 | 73 | 1 | 2 | ------ | Ω° a. |
| 25 | 30 | 19.6 | 92 | 73 | 2 | 1 | ------ | Ω° a. |
| 26 | 30.9 | 20.3 | 92 | 75 | 1 | 1 | ------ | Ω° a. |
| 27 | 30.1 | 20.9 | 88 | 76 | 1 | 1 | ------ | Ω° a. |
| 28 | 29.9 | 18.9 | 96 | 68 | 1 | 1 | ------ | Ω° a. |
| 29 | 30.4 | 20.8 | 93 | 70 | 1 | 2 | ------ | Ω° a. |
| 30 | 30.5 | 20.2 | 95 | 73 | 1 | 2 | ------ | Ω° a. |
| 31 | 32.6 | 21.4 | 94 | 63 | 4 | 1 | ------ |  |
| Mean | 30 | 20.2 | 92 | 69.8 | 1.7 | 1.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | .8 |  |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.8 | 18.3 | 98 | 61 | 3 | 9 | ------ | Ω² ○° a. ○² p. |
| 2 | 29.7 | 18.6 | 99 | 63 | 3 | 3 | .5 | Ω² ∞ ≡° a. |
| 3 | 30 | 20.9 | 99 | 70 | 10 | 9 | ------ | d² a. ⌒² p. |
| 4 | 28.6 | 19.6 | 99 | 68 | 10 | 4 | .8 | d a. |
| 5 | 32.6 | 20.9 | 98 | 59 | 2 | 2 | .3 | Ω° a. d° p. |
| 6 | 29 | 21.7 | 98 | 69 | 10 | 7 | ------ |  |
| 7 | 26.7 | 20.3 | 97 | 82 | 10 | 10 | 2.5 | Ω° d² a. d ⌽² p. |
| 8 | 27.3 | 19.1 | 99 | 67 | 10 | 6 | ------ | d° a. |
| 9 | 32.1 | 17.3 | 99 | ------ | 9 | ------ | ------ | Ω² ∞² ≡² a. |
| 10 | 29.7 | 19.6 | 99 | 68 | 10 | 5 | 1.5 | Ω² ∞² a. d² p. |
| 11 | 28.8 | 21.5 | 98 | 68 | 10 | 7 | ------ | d° a. p. ⌽° p. |
| 12 | 28.4 | 20.2 | 97 | 70 | 10 | 10 | ------ | d p. |
| 13 | 26.8 | 19.6 | 98 | 71 | 10 | 9 | 7.9 | d° ⊕° a. d² p. |
| 14 | 25.3 | 19.5 | 98 | 83 | 10 | 10 | 7.1 | d a. d² p. |
| 15 | 27.6 | 20.8 | 99 | 71 | 10 | 9 | 1 | d² a. |
| 16 | 27.7 | 19.2 | 98 | 69 | 10 | 3 | ------ |  |
| 17 | 27.4 | 19.4 | 99 | 69 | 10 | 6 | ------ | Ω°⊕²a.⌒°d°p. |
| 18 | 27.7 | 20.5 | 99 | 71 | 10 | 4 | ------ | d° a. |
| 19 | 28.7 | 20.2 | 98 | 62 | 10 | 4 | ------ | Ω° d° a. ⌽² p. |
| 20 | 27.7 | 18.9 | 98 | 65 | 10 | 6 | ------ | Ω° a. |
| 21 | 28.1 | 19 | 97 | 63 | 10 | 9 | ------ | Ω² a. ⌽° p. |
| 22 | 28.6 | 20.5 | 97 | 65 | 8 | 6 | 10.9 | Ω° ≡° a. ● ⌽° p. |
| 23 | 28.6 | 19.8 | 98 | 66 | 10 | 4 | .3 | d° a. |
| 24 | 26.3 | 19.6 | 99 | 71 | 10 | 10 | ------ | d² a. d° p. |
| 25 | 26 | 19.8 | 98 | 76 | 10 | 10 | ------ | d° a. p. |
| 26 | 30.6 | 20.5 | 99 | 62 | 10 | 5 | ------ |  |
| 27 | 31.3 | 20 | 98 | 59 | 10 | 3 | ------ | Ω² a. |
| 28 | 30.9 | 20.3 | 99 | 60 | 9 | 3 | ------ | Ω² a. |
| 29 | 30.9 | 21 | 97 | 62 | 10 | 5 | ------ | Ω² a. |
| 30 | 31.3 | 18 | 99 | 57 | 5 | 9 | ------ | Ω² ⊕ a. ⊕² p. |
| 31 | 32 | 20 | 98 | 57 | 9 | 1 | ------ | Ω² ≡° a. |
| Mean | 28.9 | 19.8 | 98.3 | 66.8 | 9 | 6.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 32.8 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CANDON.

[$\phi=17°\ 12'$ N ; $\lambda=120°\ 26'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 29.2 | 21 | 78 | 64 | 7 | 5 | ------ | Ω a. |
| 2 | 29 | 22 | 79 | 63 | 3 | 0 | ------ | Ω a. |
| 3 | 28.7 | 19.8 | 81 | 68 | 0 | 3 | ------ | Ω² a. |
| 4 | 29.4 | 20.2 | 82 | 57 | 4 | 3 | ------ | Ω² a. |
| 5 | 29.1 | 20.2 | 82 | 66 | 2 | 3 | ------ | Ω² a. |
| 6 | 30 | 20 | 82 | 64 | 8 | 1 | ------ | Ω² a. |
| 7 | 30 | 21.6 | 71 | 58 | 1 | 1 | ------ | Ω² a. |
| 8 | 29.1 | 21 | 72 | 57 | 3 | 8 | ------ | Ω² a. |
| 9 | 28.9 | 20.4 | 77 | 61 | 0 | 0 | ------ | Ω² a. |
| 10 | 29.4 | 20.5 | 80 | 68 | 0 | 0 | ------ | Ω² a. |
| 11 | 29.1 | 20.5 | 82 | 61 | 2 | 0 | ------ | Ω² a. |
| 12 | 29.8 | 21 | 77 | 59 | 0 | 3 | ------ | Ω a. d° p. |
| 13 | 30 | 22.1 | 70 | 58 | 8 | 0 | ------ |  |
| 14 | 30 | 22 | 70 | 62 | 7 | 2 | ------ |  |
| 15 | 29.2 | 22 | 72 | 64 | 1 | 0 | ------ | Ω² a. |
| 16 | 29.2 | 22 | 68 | 67 | 2 | 1 | ------ | Ω° a. |
| 17 | 29.8 | 22.1 | 69 | 59 | 9 | 6 | ------ | Ω a. |
| 18 | 28.6 | 22 | 75 | 64 | 8 | 1 | ------ |  |
| 19 | 27.4 | 21.1 | 74 | 63 | 7 | 6 | ------ | Ω a. |
| 20 | 27.7 | 19.1 | 77 | 60 | 2 | 7 | ------ | Ω² a. |
| 21 | 28.2 | 20.6 | 75 | 66 | 0 | 2 | ------ | Ω² a. |
| 22 | 28.7 | 21.5 | 75 | 64 | 9 | 5 | ------ | Ω² a. |
| 23 | 29.4? | 21.5 | 78 | 60 | 2 | 3 | ------ | Ω² a. |
| 24 | 28.7 | 21.5 | 71 | 66 | 0 | 5 | ------ | Ω² a. |
| 25 | 29.2 | 21 | 74 | 66 | 2 | 5 | ------ | Ω² a. |
| 26 | 29.6 | 21.7 | 76 | 66 | 2 | 4 | ------ | Ω a. |
| 27 | 29.3 | 22.7 | 79 | 64 | 0 | 0 | ------ | Ω² a. |
| 28 | 29.2 | 20 | 81 | 63 | 0 | 0 | ------ | Ω² a |
| 29 | 29.7 | 20.7 | 82 | 60 | 7 | 0 | ------ | Ω² a. |
| 30 | 29.8? | 23.5 | 78 | 63 | 5 | 4 | ------ | Ω° a. |
| 31 | 30.2 | 22.4 | 81 | 65 | 8 | 0 | ------ | Ω ⊕ a. |
| Mean | 29.2 | 21.2 | 76.4 | 62.8 | 3.5 | 2.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### LAOAG.

[$\phi=18°\ 12'$ N ; $\lambda=120°\ 35'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 30.8 | 20 | 88 | 72 | 1 | 4 | 2.5 |  |
| 2 | 28.3 | 20.5 | 97 | 69 | 1 | 10 | ------ | ● a. |
| 3 | 30.2 | 17.1 | 97 | 67 | 0 | 4 | ------ | Ω² ≡ a. |
| 4 | 30.4 | 18.6 | 98 | 62 | 0 | 3 | ------ | Ω² ≡ a. |
| 5 | 29.8 | 20.7 | 95 | 71 | 1 | 5 | ------ | Ω² a. |
| 6 | 31.1 | 21.4 | 93 | 59 | 1 | 3 | ------ | Ω a. |
| 7 | 34 | 17.9 | 94 | 45 | 0 | 1 | ------ | Ω² a. |
| 8 | 32.6 | 16.3 | 91 | 47 | 0 | 2 | ------ | Ω² a. |
| 9 | 31.8 | 15.5 | 93 | 46 | 0 | 1 | ------ | Ω² a. |
| 10 | 30.5 | 18.4 | 92 | 62 | 1 | 1 | ------ | Ω² a. |
| 11 | 31.4 | 20.3 | 97 | 57 | 0 | 1 | ------ | Ω² ≡ a. |
| 12 | 30.4 | 20.6 | 92 | 56 | 0 | 1 | ------ | Ω a. |
| 13 | 32.3 | 21.4 | 79 | 55 | 6 | 5 | ------ |  |
| 14 | 32.9 | 18.6 | 89 | 56 | 1 | 4 | ------ |  |
| 15 | 29.2 | 22.2 | 85 | 61 | 5 | 5 | ------ |  |
| 16 | 32.3 | 19.8 | 84 | 54 | 7 | 4 | ------ | d° p. |
| 17 | 30.9 | 17.1 | 95 | 55 | 0 | 2 | ------ | Ω² ≡° a. |
| 18 | 28.5 | 19.2 | 93 | 71 | 4 | 4 | ------ | Ω a. |
| 19 | 28.3 | 18.4 | 97 | 77 | 4 | 4 | ------ | Ω² ≡ a. |
| 20 | 29.3 | 16.8 | 97 | 58 | 1 | 4 | ------ | Ω² ≡ a. |
| 21 | 28.8 | 16.6 | 97 | 69 | 6 | 3 | ------ | Ω² ≡ a. |
| 22 | 30.3 | 17.8 | 97 | 65 | 7 | 3 | ------ | Ω² ≡ a. |
| 23 | 29.3 | 21 | 93 | 59 | 3 | 3 | ------ |  |
| 24 | 33.5 | 17.3 | 91 | 44 | 2 | 3 | ------ | Ω² a. |
| 25 | 32.3 | 17.2 | 94 | 57 | 5 | 4 | ------ | Ω a. |
| 26 | 31.8 | 19.2 | 90 | 66 | 1 | 5 | ------ | Ω a. |
| 27 | 31 | 19.4 | 96 | 63 | 0 | 3 | ------ | Ω² ≡° a. |
| 28 | 30.7 | 18.2 | 99 | 65 | 0 | 2 | ------ | Ω² ≡² a. |
| 29 | 31.8 | 20 | 96 | 66 | 0 | 2 | ------ | Ω² ≡° a. |
| 30 | 32.5 | 21.5 | 91 | 60 | 10 | 10 | ------ |  |
| 31 | 31.6 | 21.2 | 92 | 62 | 9 | 10 | ------ |  |
| Mean | 30.9 | 19 | 93 | 60.5 | 2.5 | 3.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 2.5 |  |

### SANTO DOMINGO.

[$\phi=20°\ 28'$ N ; $\lambda=121°\ 59'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 25.8 | 22 | 74 | 69 | 8 | 8 | 58.7 | d ●² ⌐↯ ↙° p. |
| 2 | 20.7 | 18.7 | 85 | 78 | 10 | 10 | 25.9 | ⌒°●°a. ↙°●p. |
| 3 | 23.2 | 18.5 | 86 | 81 | 10 | 10 | 10.7 | ⌒° a. ● a. p. |
| 4 | 26 | 20.6 | 79 | 80 | 4 | 4 | ------ |  |
| 5 | 28.2 | 23.6 | 91 | 77 | 0 | 2 | ------ |  |
| 6 | 23.3 | 21.4 | 75 | 81 | 7 | 10 | 3 | ●° d p. |
| 7 | 25 | 20 | 82 | 71 | 8 | 3 | ------ |  |
| 8 | 25 | 21.3 | 71 | 64 | 8 | 2 | ------ |  |
| 9 | 26 | 20.5 | 77 | 81 | 8 | 10 | 8.1 | ● p. |
| 10 | 22.5 | 20.6 | 93 | 88 | 10 | 10 | 15 | ● a. d a. p. |
| 11 | 24.6 | 20.3 | 82 | 80 | 4 | 8 | ------ |  |
| 12 | 21.9 | 19.7 | 74 | 72 | 7 | 10 | 17.3 | ● p. |
| 13 | 21 | 17.2 | 85 | 80 | 10 | 10 | 11.4 | d ● a. |
| 14 | 24.8 | 19.3 | 87 | 75 | 10 | 7 | 7.2 | ● a. p. |
| 15 | 23.6 | 19.5 | 86 | 68 | 10 | 5 | 1.3 | d² a. |
| 16 | 21.6 | 18.8 | 82 | 73 | 10 | 10 | 10.4 | d a. |
| 17 | 22.1 | 18.3 | 83 | 82 | 10 | 10 | 9.6 | ● a. p. |
| 18 | 24.4 | 19.6 | 94 | 77 | 10 | 4 | ------ | d a. |
| 19 | 23.5 | 19.3 | 80 | 79 | 5 | 10 | 14.2 |  |
| 20 | 22 | 17.8 | 90 | 80 | 10 | 10 | 8.1 | ● a. p. d p. |
| 21 | 24.4 | 19.2 | 91 | 78 | 10 | 8 | 25.1 | d° a. ● p. |
| 22 | 22.4 | 19.3 | 90 | 76 | 10 | 10 | 60.4 | ● d a. p. |
| 23 | 22.8 | 18.5 | 87 | 76 | 10 | 5 | 1.8 | d a. ●° p. |
| 24 | 24.9 | 19.9 | 80 | 70 | 8 | 4 | ------ | ●° p. |
| 25 | 24.4 | 20.8 | 73 | 64 | 9 | 0 | ------ | d° p. |
| 26 | 26.4 | 21.2 | 81 | 73 | 1 | 9 | .9 | < ●° p. |
| 27 | 26.4 | 21.7 | 87 | 81 | 9 | 8 | ------ | Ω p. |
| 28 | 26.8 | 20.8 | 95 | 76 | 2 | 0 | ------ | Ω a. p. |
| 29 | 25.9 | 19 | 84 | 71 | 1 | 2 | ------ | Ω a. |
| 30 | 27.1 | 22 | 83 | 83 | 8 | 10 | ------ | ⊤ Ω p. |
| 31 | 28.4 | 21.3 | 95 | 72 | 3 | 1 |  |  |
| Mean | 24.4 | 20 | 83.9 | 76 | 7.4 | 6.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 289.1 |  |

# SEISMOLOGICAL BULLETIN FOR JANUARY, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, 2^h^ 0^m^. **Sarangani** (S of Mindanao). Earthquake of intensity II.

1, 23^h^ 30^m^. **Sarangani** (S of Mindanao). Earthquake of intensity III.

6, 20^h^ 30^m^. **Catbalogan** (W of Samar). Earthquake of intensity III.

7, 4^h^ 42^m^. **Laoag** (NW of Luzon). Earthquake of intensity IV, duration 4 seconds.

16, 10^h^ 45^m^. **Sarangani** (S of Mindanao). Oscillatory earthquake; direction SE–NW, intensity III.

17, 6^h^ 57^m^ 34^s^.* **Northeastern Mindanao and Leyte Island.** Earthquake of intensity V whose epicenter appears to have been in the Pacific Ocean, close to the northeastern coast of Mindanao and not far to the south or southeast of Siargao Island. The isoseismal V incloses the entire northeast of Mindanao, from the northern part of the Agusan Valley to a distance of more than 200 kilometers south of Surigao; the isoseismal II incloses Leyte Island and the part of eastern Mindanao comprised by the Provinces of Surigao and Agusan. The longer axis of the area shaken had, consequently, an extent of about 500 kilometers in the direction SSE–NNW. This disturbance was registered only by the seismographs of Manila and Zikawei.

19, 1^h^ 30^m^. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

19, 13^h^ 47^m^ 20^s^.* **Eastern Mindanao.** Earthquake of intensity IV. Its epicenter lay probably near the eastern coast of the island, toward the parallel 8° north. This supposition rests, however, only on the observations made at Davao, where the earthquake was of intensity III and direction ENE–WSW, and at Butuan, where it showed the same force III, but direction SE–NW. As these two stations are situated 150 kilometers from the supposed epicenter, it is probable that on the eastern coast, from which we have no data whatever, the earthquake displayed intensity IV or V. It was registered only by the seismographs at Manila and Zikawei.

22, 8^h^ 38^m^. **Talacogon** (Agusan Valley, Mindanao). Earthquake shocks, intensity IV.

22, 23^h^ 20^m^. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

27, 7^h^ 9^m^. **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction SSE–NNW, intensity III, duration 5 seconds.

28, 4^h^ 30^m^. **Tacloban** (NE of Leyte). Earthquake of intensity IV.

31, 3^h^ 5^m^. **Western Samar and northeastern Leyte.** Earthquake of intensity III, whose epicenter lay near Biliran Island. It was perceptible in the whole of northern Leyte and western Samar, the isoseismal III inclosing an area of about 150 kilometers in the direction SE–NW, and of 80 kilometers in the direction SW–NE.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

**Notice.**—At $23^h$ $6^m$ $5^s$ of January 27, the seismographs of Manila Observatory registered the first earthquake of force III which had its origin in Taal Volcano, then about to begin a violent eruption. As a special account will be given of the latter, containing a complete list of the disturbances which have been perceived and registered from January 27 to February 13, we omit here those which otherwise belong to this month.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight = $0.^h$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 1 | 1 | $I_u$ | V. | 18 27 26 | ---------- | ---------- | ---------- | ------ | ----- | 19 30 | |
| | | | H. NNW | 18 27 26 | ---------- | ---------- | ---------- | ------ | ----- | 19 22 | |
| | | | H. WSW | 18 27 26 | ---------- | ---------- | ---------- | ------ | ----- | 19 25 | |
| 2 | 4 | $III_u$ | V. | 7 34 24 | 7 41 50 | 7 50 16 | 7 58 28 | 0.31 | 14.4 | 9 30 | Vertical component 0.05 mm. Earthquake in Turkestan. |
| | | | H. NNW | 7 34 24 | 7 41 20 | 7 51 25 | 8 00 17 | 3.13 | 13.2 | 9 35 | |
| | | | H. WSW | 7 34 24 | 7 41 34 | 7 51 25 | 7 58 21 | 2.60 | 13.8 | 9 46 | |
| 3 | 4 | I | H. NNW | 17 41 48 | ---------- | ---------- | ---------- | ------ | ----- | 18 25 | |
| | | | H. WSW | 17 41 48 | ---------- | ---------- | ---------- | ------ | ----- | 18 26 | |
| 4 | 5 | $II_d$ | V | 7 51 30 | ---------- | 7 51 54 | 7 52 08 | 1.50 | 2.4 | 7 59 | V. C. 1.12 mm. |
| 5 | 7 | $I_v$ | V. | 4 42 08 | ---------- | 4 42 56 | 4 43 00 | .02 | 2.4 | 4 46 | V. C. 0.01 mm. Eqke., IV at Laoag (NW of Luzon). |
| 6 | 7 | $II_r$ | V. | 10 19 10 | 10 32 44 | 10 28 51 | 10 37 04 | .05 | 10 | 11 57 | V. C. 0.01 mm. |
| | | | H. NNW | 10 19 13 | 10 23 37 | 10 28 53 | 10 33 00 | 1.35 | 8.1 | 11 52 | |
| | | | H. WSW | 10 19 13 | 10 23 54 | 10 28 08 | 10 37 09 | 1.51 | 9.6 | 12 06 | |
| 7 | 8 | I | V. | 17 06 13 | ---------- | ---------- | ---------- | ------ | ----- | 17 12 | V.C. 0.01 mm. |
| | | | H. NNW | 17 06 13 | ---------- | ---------- | ---------- | ------ | ----- | 17 15 | |
| | | | H. WSW | 17 06 13 | ---------- | ---------- | ---------- | ------ | ----- | 17 17 | |
| 8 | 10 | $I_d$ | V. | 16 24 04 | ---------- | 16 24 17 | 16 24 46 | .32 | 2.4 | 16 28 | V.C. 0.12 mm. |
| 9 | 11 | I | V. | 0 35 23 | ---------- | ---------- | ---------- | ------ | ----- | 1 04 | |
| | | | H· WSW | 0 35 37 | ---------- | ---------- | ---------- | ------ | ----- | 1 08 | |
| 10 | 16 | $I_r$ | V. | 16 55 51 | 16 59 22 | 17 04 24 | 17 07 38 | .03 | 10.8 | 17 34 | |
| | | | H. NNW | 16 55 52 | 16 59 29 | 17 04 31 | 17 08 16 | .13 | 8.4 | 17 34 | |
| | | | H. WSW | 16 55 52 | 16 59 40 | 17 04 43 | 17·07 40 | .45 | 9 | 17 47 | |
| 11 | 17 | $I_v$ | V | 6 57 34 | ---------- | 6 59 42 | 7 00 12 | .06 | 2.4 | 7 22 | V. C. 0.01 mm. Eqke., V in the northeastern part of Mindanao. |
| | | | H. NNW | 6 57 37 | ---------- | 6 59 42 | 7 00 27 | .16 | 7.2 | 7 16 | |
| | | | H. WSW | 6 57 37 | ---------- | 6 59 19 | 7 00 37 | .28 | 7.8 | 7 22 | |
| 12 | 19 | $I_d$ | V. | 11 04 43 | ---------- | 11 04 57 | 11 04 59 | .17 | 2 | 11 09 | V. C. 0.05 mm. |
| 13 | 19 | $I_v$ | V. | 13 47 20 | ---------- | 13 49 19 | 13 53 11 | .02 | 2.8 | 14 06 | Eqke., IV E of Mindanao. |
| | | | H. NNW | 13 47 24 | ---------- | 13 49 19 | 13 52 47 | .04 | 8.4 | 14 07 | |
| | | | H. WSW | 13 47 24 | ---------- | 13 49 35 | 13 52 46 | .14 | 7.8 | 14 37 | |
| 14 | 24 | $I_d$ | V. | 3 04 39 | ---------- | 3 04 59 | 3 05 11 | .03 | 2.2 | 3 06 | V. C. 0.01 mm. |
| 15 | 25 | I | V. | 8 47 24 | ---------- | ---------- | ---------- | ------ | ----- | 9 27 | |
| | | | H. NNW | 8 47 24 | ---------- | ---------- | ---------- | ------ | ----- | 9 22 | |
| | | | H. WSW | 8 47 24 | ---------- | ---------- | ---------- | ------ | ----- | 9 28 | |
| 16 | 27 | I | V. | 4 57 07 | ---------- | ---------- | ---------- | ------ | ----- | 5 02 | |
| | | | H. WSW | 4 57 08 | ---------- | ---------- | 5 01 11 | .03 | 6 | 5 10 | |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8 seconds; WSW–ENE pendulum, T=8.6 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, $2^h$ $0^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

1, $23^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

6, $20^h$ $30^m$. **Catbalogan** (W de Sámar). Temblor de tierra de intensidad III.

7, $4^h$ $42^m$. **Laoag** (NW de Luzón). Temblor de tierra de intensidad IV, duración 4 segundos.

16, $10^h$ $45^m$. **Sarangani** (S de Mindanao). Temblor oscilatorio; dirección SE–NW; intensidad III.

17, $6^h$ $57^m$ $34^s$.* **NE de Mindanao é Isla de Leyte.** Terremoto de intensidad V, cuyo epicentro parece se hallaba en el Pacífico cerca de la costa NE de Mindanao, no lejos al S ó SE de la Isla Siargao. La isoseiste V encierra toda la parte NE de Mindanao, desde la parte N del Valle del Agusan hasta más de 200 kilómetros, al S de Surigao; la II encierra toda la Isla de Leyte y toda la parte oriental de Mindanao comprendida por los distritos ó Provincias de Surigao y del Agusan. El eje mayor del área conmovida tuvo por consiguiente una extensión de unos 500 kilómetros en la dirección SSE–NNW. Este terremoto fué registrado solamente por los seismógrafos de Manila y de Zikawei.

19, $1^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

19, $13^h$ $47^m$ $20^s$.* **E de Mindanao.** Temblor de tierra de intensidad IV. Su epicentro probablemente se hallaba cerca de la costa E de la isla, hacia el paralelo 8° lat. N. Esta es una suposición deducida de las solas observaciones de Davao, donde el terremoto tuvo intensidad III y dirección ENE–WSW, y de las de Butúan, donde tuvo la misma intensidad III y la dirección SE–NW. Como estas dos estaciones distan del supuesto epicentro 150 kilómetros, es probable que en la costa oriental, de donde no poseemos datos, tuvo intensidad IV ó V. Fué registrado por los seismógrafos de Manila y Zikawei solamente.

22, $8^h$ $38^m$. **Talacogon** (Valle del Agusan, Mindanao). Temblor de tierra de intensidad IV.

22, $23^h$ $20^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

27, $7^h$ $9^m$. **Tacloban** (NE de Leyte). Temblor oscilatorio. Dirección SSE–NNW, intensidad III, duración 5 segundos.

28, $4^h$ $30^m$. **Tacloban** (NE de Leyte). Temblor de tierra de intensidad IV.

31, $3^h$ $5^m$. **W de Sámar y NE de Leyte.** Temblor de tierra de intensidad III, cuyo epicentro se hallaba cerca de la Isla Biliran. Fué perceptible en toda la parte N de Leyte y en la occidental de la Isla de Sámar, comprendiendo la isoseiste III un área de unos 150 kilómetros de longitud en la dirección SE–NW, y de 80 kilómetros en la de SW–NE.

NOTA.—El día 27 á $23^h$ $6^m$ $5^s$ registraron los seismógrafos del Observatorio de Manila el primer temblor de tierra de intensidad III que tenía su origen en el Volcán de Taal, el cual estaba entrando en erupción. Como en otra parte se dará cuenta especial de ella, con una lista completa de todos los seismos percibidos y registrados en el Observatorio desde el citado 27 de Enero hasta el 13 de Febrero, omitimos aquí los que corresponden á este mes.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

# BULLETIN FOR FEBRUARY, 1911.

# METEOROLOGICAL BULLETIN FOR FEBRUARY, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The monthly mean of atmospheric pressure is somewhat higher than that for February, 1910, especially in central and northern Luzon. The days of highest pressures were the 11th and 12th, the 20th and the 24th: the lowest pressures were generally observed on the 1st in Luzon, and on the 16th in the Visayas and Mindanao.

The mean monthly temperature is for almost all our stations slightly lower than that of the preceding year. The extreme values for Manila were 33.3°C. and 18°C.; they were registered on the 1st and on the 22d and 23d, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR FEBRUARY, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from February, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from February, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Surigao | 758.94 | + 0.23 | 761.09 | 11 | 756.90 | 16 | 25.5 | + 0.2 | 30.6 | 3, 27 | 20.7 | 2, 14 |
| Cebu | 59.08 | + .44 | 60.92 | 11 | 57.20 | 16 | 25.8 | 0 | 31 | 5 | 20.5 | 3 |
| Iloilo | 59.35 | + .52 | 61.22 | 24 | 57.36 | 1 | 25.5 | — .7 | 33.2 | 27 | 20.2 | 13 |
| Ormoc | 59.25 | + .39 | 61.19 | 11 | 57.26 | 16 | 24.9 | — .3 | 32.5 | 5 | 17.4 | 2 |
| Tacloban | 60.09 | ---------- | 62.17 | 12 | 58.02 | 16 | 25.6 | — .1 | 32.8 | 2, 4 | 21.3 | 8 |
| Capiz | 60.08 | ---------- | 61.97 | 20 | 57.76 | 1 | 25.8 | ---------- | 31.5 | 1 | 20.7 | 2 |
| Calbayog | 59.52 | + .32 | 61.52 | 12 | 57.68 | 16 | 24.7 | — .4 | 32.4 | 17 | 19 | 9 |
| Legaspi | 60.03 | + .31 | 61.86 | 12 | 57.92 | 17 | 25.4 | — .5 | 31.9 | 3 | 19.4 | 24 |
| Atimonan | 60.97 | + .93 | 63.28 | 20 | 57.92 | 1 | 25.2 | — .2 | 31.2 | 1 | 20.3 | 3 |
| Paracale | 61 | ---------- | 63.40 | 20 | 58.11 | 1 | 25.2 | ---------- | 31.5 | 1 | 20.5 | 3 |
| Manila | 60.84 | + 1.10 | 63.01 | 20 | 57.78 | 1 | 24.8 | — .8 | 33.3 | 1 | 18 | 22, 23 |
| San Isidro | 60.79 | + 1.04 | 63.08 | 20 | 57.46 | 1 | 24.8 | — .9 | 33 | 1 | 17.9 | 24 |
| Dagupan | 60.56 | + 1.04 | 62.59 | 20 | 57.22 | 1 | 25.6 | — .9 | 35.5 | 1 | 18.8 | 21 |
| Bolinao | 60.53 | + 1.09 | 62.46 | 24 | 57.23 | 1 | 25.8 | — .4 | 33.9 | 13 | 17.9 | 11 |
| Baguio[1] | 637.47 | + .53 | 639.20 | 11 | 635.45 | 1 | 16.5 | — .7 | 25.4 | 1 | 11 | 20 |
| Vigan | 760.76 | + 1.05 | 762.83 | 20 | 757.46 | 1 | 25.8 | — .5 | 33.9 | 10 | 18 | 23 |
| Tuguegarao | 62.54 | + 1.56 | 65.84 | 20 | 57.30 | 1 | 23.1 | — 1.4 | 34.5 | 1 | 15.5 | 22 |
| Aparri | 63.25 | + 1.69 | 66.63 | 20 | 57.59 | 1 | 23 | — .7 | 31.1 | 1 | 16.6 | 22 |

[1] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—The amount of rainfall of this month for the stations of Luzon has been generally greater than in February, 1910. From the Visayas and Mindanao some stations reported a total of rainfall greater, and some smaller, than last year. The records of Manila Observatory show an amount of only 8.5 millimeters for the whole month; it differs from the normal of February by — 1.9 millimeters.

### RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF FEBRUARY, 1911.

| Station. | Total. | Departure from February, 1910. | Rainy days. | Departure from February, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from February, 1910. | Rainy days. | Departure from February, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *mm.* |  |  | *mm.* |  |  | *mm.* | *mm.* |  |  | *mm.* |  |
| Isabela, Basilan | 152.2 | + 95.6 | 9 | 0 | 54.9 | 21 | Virac | 420.4 | +154.9 | 21 | +4 | 69.6 | 20 |
| Zamboanga | 183 | + 76.1 | 11 | +3 | 50.8 | 20 | Nueva Caceres | 316.6 | +182.6 | 17 | +6 | 130.9 | 18 |
| Davao | 147 | —205.6 | 8 | —8 | 26.7 | 5 | Batangas | 74.8 | + 73.7 | 8 | +6 | 44.5 | 11 |
| Cotabato | 20.7 | —107.6 | 8 | —3 | 13 | 12 | Atimonan | 231.4 | +101.3 | 20 | +7 | 30.8 | 18 |
| Dapitan | 38.5? | — 41.3 | 12 | —2 | 11.7 | 20, 21 | Silang | 43.7 | + 24.6 | 8 | +4 | 15 | 6 |
| Butuan | 508.2 | +154.6 | 18 | —3 | 147.5 | 6 | Paracale | 501.3 | -------- | 23 | ------ | 88.3 | 11 |
| Dumaguete | 181.5 | -------- | 12 | ------ | 51.6 | 20 | Santa Cruz, La Laguna | 82.3 | -------- | 14 | ------ | 23.4 | 6 |
| Yap, W. Carolines | 315.9 | +187.9 | 20 | +4 | 162.1 | 28 | Antipolo | 17.7 | -------- | 6 | ------ | 9.3 | 11 |
| Tagbilaran | 124.5 | — 36.3 | 12 | —2 | 47.8 | 18 | Manila | 8.5 | — 2.6 | 6 | +1 | 4.8 | 6 |
| Surigao | 370.2 | —222.4 | 17 | —5 | 117.1 | 6 | Iba | 4 | -------- | 3 | ------ | 3.2 | 11 |
| Maasin | 372.9 | + 12.5 | 10 | 0 | 87.4 | 19 | San Isidro | 27 | + 26.2 | 8 | +6 | 18.1 | 11 |
| Cebu | 106.2 | — 90.1 | 13 | —2 | 25.7 | 6 | Tarlac | 30.2 | + 29.2 | 3 | +2 | 25.4 | 4 |
| Iloilo | 77 | + 31.3 | 11 | +4 | 19 | 12, 19 | Dagupan | 7.7 | — 7.1 | 4 | +1 | 5.1 | 1 |
| Cuyo | 0 | -------- | 0 | ------ | 0 | 0 | Bolinao | 4.4 | — 4.8 | 2 | +1 | 3.4 | 27 |
| Ormoc | 106.3 | — 9.8 | 16 | —2 | 28.9 | 6 | Baguio | 37.7 | + 29.8 | 7 | +4 | 19.4 | 4 |
| Tacloban | 320.1 | + 65.3 | 22 | +1 | 82.1 | 6 | San Fernando, Union | 2 | — 28.5 | 2 | +1 | 1.5 | 11 |
| Capiz | 136.3 | -------- | 21 | ------ | 51.7 | 6 | Echagüe | 79.8 | + 26.3 | 19 | +3 | 11.4 | 19 |
| Borongan | 496.5 | + 8.6 | 22 | —3 | 106.7 | 20 | Candon | 5.8 | + 2 | 2 | +1 | 4.8 | 28 |
| Calbayog | 357.3 | + 17.2 | 20 | +1 | 80.3 | 20 | Vigan | 1.7 | + 1.4 | 2 | +1 | 1.3 | 27 |
| Masbate | 242.1 | — 22.2 | 16 | —1 | 69.8 | 20 | Tuguegarao | 52.7 | + 16.2 | 3 | —3 | 21.5 | 11 |
| Legaspi | 378.4 | + 7.5 | 21 | +1 | 65 | 18 | Laoag | 0 | 0 | 0 | 0 | 0 | 0 |
| Sumay, Guam | 287.4 | +226.9 | 19 | +5 | 76.2 | 13 | Aparri | 191.6 | +171.8 | 17 | +8 | 72.3 | 3 |
| Calapan | 97.4 | + 6.9 | 19 | +3 | 15.2 | 13 | Sto. Domingo, Batanes Is. | 45.2 | — 99 | 13 | —9 | 14.2 | 2 |

## DEPRESSIONS AND TYPHOONS.

The observations taken at Yap, Western Carolines, on the 12th and 13th, gave indications of a depression situated south and southwest of the said station; and our weather maps for the morning and afternoon of the 15th showed the same depression to the east of the Visayas or Mindanao. But, to judge from the weather map of the following day, the depression had probably filled up on the spot.

According to the observations from Guam and Yap, on the 25th, 26th, and 27th, there were signs of another depression toward the northeast quadrant of the latter station. On the 27th a real typhoon appeared to the ESE of Yap; but its discussion will be taken up next month to which it properly belongs.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La media mensual de la presión atmosférica es algo mayor que la de Febrero, 1910, especialmente en el centro y norte de Luzón. Los días de presiones más altas fueron el 11 y 12, el 20 y el 24; las presiones menores se observaron generalmente el 1 en Luzón, y el 16 en Visayas y Mindanao.

La temperatura media mensual resulta para casi todas las estaciones ligeramente más baja que la del año próximo pasado. Los valores extremos para Manila fueron 33.3° C y 18° C habiendo sido registrado el primero el día 1, y el segundo los días 22 y 23.

**Precipitación acuosa.**—La lluvia caída este mes en las estaciones de Luzón supera generalmente á la de Febrero, 1910. La de Visayas y Mindanao es en unas partes mayor y en otras menor que la del año pasado. En los pluviómetros del Observatorio de Manila sólo se recogieron en todo el mes 8.5 mm. de agua, cantidad inferior á la normal de Febrero en 1.9 mm.

## DEPRESIONES Y TIFONES.

Los días 12 y 13 las observaciones de Yap, Carolinas Occidentales, dieron indicios de una depresión al S y SW; y el día 15 los mapas del tiempo de la mañana y tarde indicaban esta misma depresión al E de Mindanao ó de las Islas Visayas: mas hubo de desaparecer sin seguir más adelante, según se desprende del mapa del tiempo de la mañana del 16.

Del 25 al 27 las observaciones de Yap señalaron otra depresión hacia el primer cuadrante de aquella estación. El 27 apareció un verdadero tifón al ESE de Yap: mas como no llegó á la menor distancia de dicha estación hasta el día 2 de Marzo, dejamos su discusión para el mes siguiente.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] |  |  | Underground temperature. |  |  |  |  |  | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. | 0.25 meter. |  | 0.50 meter. |  | 1.50 meters. | 2.50 meters. |  |  | Free exposure, total. | Shelter, total. |
|  |  |  |  |  | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. |  |  |  |  |
|  | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 757.78 | 26.4 | 33.3 | 20.7 | 26.8 | 29 | 27.2 | 27.5 | 27.3 | 27.8 | 76.6 | 19.2 | 4.3 | 3.4 |
| 2 | 58.95 | 25.9 | 31.4 | 21 | 26.9 | 28.9 | 27.3 | 27.6 | 27.3 | 27.9 | 81.1 | 20 | 3.4 | 2.5 |
| 3 | 59.66 | 25.9 | 32 | 22 | 27.2 | 28.3 | 27.6 | 27.8 | 27.3 | 27.8 | 75.1 | 18.3 | 4.1 | 3.2 |
| 4 | 60.95 | 24.9 | 32 | 19.7 | 26.3 | 28 | 27.3 | 27.8 | 27.3 | 27.8 | 79 | 18.4 | 3.1 | 2.8 |
| 5 | 61.79 | 23.8 | 26.8 | 21.4 | 26.5 | 27.2 | 27.3 | 27.2 | 27.3 | 27.6 | 86.1 | 18.8 | 1.3 | 1.7 |
| 6 | 60.48 | 23.7 | 27.8 | 21.3 | 26 | 26.9 | 27 | 27.1 | 27.3 | 27.8 | 88.7 | 19.3 | .5 | 1.4 |
| 7 | 60.52 | 24.9 | 30.4 | 22 | 26 | 27.3 | 27 | 27.2 | 27.3 | 27.8 | 71.1 | 16.4 | 4.9 | 3.6 |
| 8 | 60.31 | 24.2 | 29.6 | 20.6 | 26 | 27 | 26.9 | 27.1 | 27.3 | 27.6 | 73.6 | 16.3 | 4.3 | 3.3 |
| 9 | 60.41 | 24.5 | 31.7 | 18.7 | 25.3 | 27.3 | 26.7 | 27 | 27.3 | 27.7 | 73.1 | 16.1 | 4.7 | 3.7 |
| 10 | 62.07 | 24.6 | 31.3 | 19.2 | 25.4 | 27.3 | 26.7 | 26.9 | 27.3 | 27.7 | 71.4 | 16 | 5 | 3.8 |
| 11 | 62.59 | 24.5 | 30.3 | 20.7 | 25.8 | 27.3 | 26.6 | 27 | 27.3 | 27.7 | 82 | 18.6 | 2.6 | 2.3 |
| 12 | 62.21 | 25 | 31.7 | 21.8 | 26 | 27.4 | 26.8 | 27.2 | 27.3 | 27.8 | 80.8 | 18.7 | 4 | 3.4 |
| 13 | 61.96 | 24.5 | 30.6 | 20.4 | 26 | 27.7 | 26.8 | 27 | 27.3 | 27.8 | 72.4 | 16.3 | 4.3 | 3.3 |
| 14 | 61.12 | 24.2 | 31.2 | 19.7 | 25.6 | 27.2 | 26.7 | 26.9 | 27.3 | 27.8 | 77.6 | 17.2 | 2.9 | 2.4 |
| 15 | 60.08 | 24.5 | 30.6 | 18.7 | 25.3 | 27.2 | 26.6 | 26.9 | 27.3 | 27.8 | 78.8 | 17.7 | 3.5 | 2.7 |
| 16 | 59.36 | 24.9 | 31.7 | 19.6 | 25.7 | 27 | 26.8 | 26.8 | 27.3 | 27.8 | 75.7 | 17.4 | 4.4 | 3.3 |
| 17 | 59.06 | 25.3 | 31.8 | 20.1 | 25.7 | 27.1 | 26.6 | 26.9 | 27.3 | 27.8 | 75.3 | 17.7 | 3.8 | 3 |
| 18 | 59.76 | 25.7 | 31.5 | 20.7 | 25.8 | 27.5 | 26.7 | 26.9 | 27.3 | 27.8 | 69.8 | 16.8 | 6.7 | 5.4 |
| 19 | 61.76 | 24.9 | 30.4 | 21.2 | 25.9 | 27.2 | 26.7 | 26.9 | 27.3 | 27.6 | 63.8 | 14.8 | 6.9 | 5.1 |
| 20 | 63.01 | 24.7 | 30.3 | 21.2 | 25.5 | 27 | 26.6 | 26.7 | 27.2 | 27.7 | 65.8 | 15 | 5.4 | 4 |
| 21 | 62.30 | 24.2 | 29.4 | 20.1 | 25.5 | 26.9 | 26.5 | 26.7 | 27.2 | 27.7 | 70.2 | 15.6 | 4.1 | 3.3 |
| 22 | 60.97 | 23.7 | 30.3 | 18 | 24.7 | 27.2 | 26.2 | 26.5 | 27.2 | 27.6 | 72.3 | 15.5 | 4.9 | 3.5 |
| 23 | 61.23 | 24.4 | 30.7 | 18 | 25.3 | 27.5 | 26.3 | 26.7 | 27.2 | 27.7 | 73.5 | 16.5 | 5.1 | 3.7 |
| 24 | 62.48 | 24.4 | 31.1 | 18.4 | 25.7 | 28.1 | 26.6 | 27 | 27.2 | 27.7 | 70.6 | 15.7 | 5.2 | 3.8 |
| 25 | 61.99 | 25.1 | 30.7 | 20.1 | 26 | 27.7 | 26.8 | 27.1 | 27.2 | 27.7 | 68 | 15.9 | 5.4 | 4 |
| 26 | 60.82 | 24.3 | 28.7 | 21.9 | 26.2 | 27.4 | 26.8 | 26.9 | 27.2 | 27.7 | 82.3 | 18.5 | 1.9 | 1.9 |
| 27 | 60.09 | 25 | 29.8 | 21.3 | 25.9 | 27.8 | 26.8 | 27 | 27.2 | 27.7 | 80.5 | 18.8 | 3.6 | 2.6 |
| 28 | 59.94 | 25.1 | 30.5 | 21.3 | 26.2 | 28.2 | 26.9 | 27.2 | 27.1 | 27.7 | 75.8 | 17.8 | 5.2 | 3.8 |
| Mean | 760.84 | 24.8 | 30.6 | 20.4 | 25.9 | 27.5 | 26.8 | 27.1 | 27.3 | 27.7 | 75.4 | 17.3 | 4.1 | 3.2 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  | 115.5 | 90.9 |
| Departure from normal | —0.44 | —0.5 | —0.1 | +0.1 |  |  |  |  |  |  | +1.4 | —0.3 |  |  |

| Date. | Wind. |  |  |  | Clouds. |  |  |  |  | Sunshine. |  | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Upper. |  | Lower. |  |  |  |  |  |
|  |  | *Km.* | *Km.* |  | *0–10.* |  |  |  |  | *h.* | *m.* | *mm.* |  |
| 1 | SE | 118.5 | 14 | SE | 2.7 | Ci. |  | Cu. | SE | 9 | 30 |  |  |
| 2 | E, W quads. | 101.5 | 14 | W | 3.7 | Ci.-S. |  | Cu. | ENE | 8 | 05 |  |  |
| 3 | E quad. | 172 | 18.5 | SSE | 3.8 | Ci. |  | Cu. | E | 7 | 25 |  |  |
| 4 | Variable | 64.5 | 10 | WNW | 7.8 | Ci.-S. |  | Cu. | E | 4 | 50 | 0.6 | Ω a. ● p. |
| 5 | NE quad. | 184 | 22 | NNE | 9.6 | Ci.-S. |  | Fr.-N. | E | 0 | 25 | .6 | ●° a. d° p. |
| 6 | NE quad. | 119 | 9.5 | NE | 9.6 | A.-Cu. |  | Fr.-N. | ENE | 0 | 00 | 4.8 | d a. p. |
| 7 | NE quad. | 187.5 | 21 | ESE | 8.5 | A.-Cu. |  | Cu. | E | 2 | 30 |  |  |
| 8 | E quad. | 164.5 | 24 | E | 8.8 | A.-Cu. |  | Cu. | E | 2 | 40 |  |  |
| 9 | E quad. | 118.5 | 18 | ESE | 6.3 | Ci. |  | Cu. | E | 6 | 55 |  |  |
| 10 | NE quad. | 110 | 15.5 | NNE | 5.5 | Ci. |  | Cu. | E | 7 | 20 |  |  |
| 11 | N quad. | 261.5 | 27 | NNE | 8.2 | Ci.-S. |  | Cu. | E | 3 | 35 | 1.9 | ●° p. |
| 12 | NE quad. | 184 | 21 | ENE | 8.8 | A.-Cu. |  | Cu. | E | 3 | 40 | .3 | d° a. d p. |
| 13 | E quad. | 131 | 18 | ESE | 7.4 | Ci.-S. |  | Cu. | E | 4 | 45 |  |  |
| 14 | NE quad. | 122.5 | 14 | NNE | 9.4 | A.-Cu. |  | Cu.-N. | ENE | 2 | 35 |  |  |
| 15 | W quad. | 96 | 11 | W | 8.2 | Ci. | SSE | Cu. | E | 7 | 30 |  |  |
| 16 | NE quad. | 156 | 21 | E | 6.5 | Ci. |  | Cu. | ENE | 7 | 20 |  |  |
| 17 | NE quad. | 125 | 16 | NE | 8.1 | Ci. |  | Cu. | E | 4 | 35 |  |  |
| 18 | NNE | 343.5 | 38.5 | NNE | 7.7 | A.-Cu. |  | Cu. | ENE | 3 | 10 |  | Ω a. |
| 19 | NE quad. | 294.5 | 32 | NNE | 8.9 | Ci.-S. | SEbyS | S.-Cu. | ENE | 0 | 25 |  | Ω a. |
| 20 | N quad. | 149 | 17.5 | NE | 7.8 | A.-Cu. |  | Cu. | E | 5 | 05 |  | d° a. |
| 21 | N quad. | 165.5 | 20.5 | NE | 9 | A.-Cu. |  | Cu. | E | 2 | 45 |  | < p. |
| 22 | WSW | 151.5 | 17 | SSE | 4.3 | Ci. |  | Cu. |  | 9 | 35 |  | Ω ◠° a. |
| 23 | SE, W quads. | 149.5 | 18 | NW | 3.7 | Ci. |  | Cu. | E | 9 | 50 |  |  |
| 24 | W quad. | 143 | 17.5 | W | 3.5 |  |  | Cu. | E | 10 | 05 |  |  |
| 25 | NE quad. | 198 | 18.5 | NE, E | 7.8 | Ci. |  | Cu.-N. | NE | 3 | 35 |  |  |
| 26 | N quad. | 135 | 17 | N | 9.6 | Ci.-S. |  | N.-cf. | NbyE | 0 | 30 | .3 | p° a. p. |
| 27 | NW quad. | 170.5 | 15 | N | 6.4 | Ci.-S. |  | Cu. | E | 6 | 10 |  |  |
| 28 | NW quad. | 223 | 18 | WSW | 4.4 | Ci. |  | Cu. | E | 8 | 10 |  |  |
| Mean |  | 162.1 | 18.7 |  | 7 |  |  |  |  | 5 | 06 |  |  |
| Total |  |  |  |  |  |  |  |  |  | 143 | 00 | 8.5 |  |
| Departure from normal |  | —29.3 |  |  | + 2.2 |  |  |  |  | -57 | 00 | —1.9 |  |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 757.57 | 26.1 | 30.4 | 22.5 | 82.2 | NE quad. | 1.5 | 4.7 | Ci.-S. NE | Cu. E | ------ | Ω$^2$ a. p. |
| 2 | 58.62 | 25 | 29.6 | 20.7 | 82.7 | SSE | 1.3 | 2.3 | Ci. | Cu. | ------ | Ω$^2$ a. ∞ Ω° p. |
| 3 | 58.83 | 25.7 | 30.6 | 22 | 82.2 | NE quad. | 1.7 | 4.3 | Ci. NE | Cu. E | 1.8 | Ω$^2$ a. p. ∞° p. |
| 4 | 59.44 | 26.2 | 30.2 | 22.7 | 82.7 | NE quad. | 1.8 | 5.8 | Ci.-S. E | Cu., Cu.-N. ENE | 7.1 | Ω$^2$ ●° a. ∞ ● p. |
| 5 | 59.13 | 25.5 | 28.9 | 23.2 | 86.5 | NE quad. | 2 | 7.5 | ------------------ | Fr.-N. NE | 43.6 | d° a. ●° ☇$^2$ p. |
| 6 | 58.22 | 24.1 | 25.6 | 22.7 | 91.3 | NE quad. | 1.7 | 10 | ------------------ | Fr.-N. NE | 117.1 | ●$^2$ d° a. ● p. |
| 7 | 58.82 | 24.2 | 26.9 | 22 | 90.3 | E quad. | 2.5 | 10 | ------------------ | N. | 16.5 | ●$^2$ d° a. ↙° d° p. |
| 8 | 58.74 | 26.4 | 29 | 23.1 | 75.3 | NE quad. | 2.5 | 6.7 | Ci.-S., A.-Cu. NE, SE | Cu. NE, E | ------ | Ω° p. |
| 9 | 58.75 | 25.2 | 27.9 | 21.2 | 87.8 | NNW | 1.7 | 7 | Ci.-S. | Fr.-N. NE | 9.6 | Ω° d° ●° a. p. |
| 10 | 60.11 | 24.8 | 28.3 | 21.8 | 90.5 | SE quad. | 1 | 5.7 | Ci. E | Cu.-N., Fr.-N. NE | 9.1 | Ω°●°d°a Ω$^2$●p. |
| 11 | 61.09 | 24.6 | 28.4 | 22.1 | 91 | SE quad. | .8 | 7.8 | Ci.-S. E | Cu., Cu.-N. | 2.5 | Ω$^2$ a. ●° Ω° p. |
| 12 | 60.78 | 23.4 | 25.4 | 22.1 | 94.2 | Variable | .7 | 8.7 | Ci.-S. E | Cu.-N., N. | 29.7 | Ω$^2$ a. ●° a. p. |
| 13 | 60.07 | 25 | 29.5 | 22 | 82.7 | Variable | 1.5 | 6.7 | Ci.-S. E | Cu. NE | ------ | d° a. |
| 14 | 58.75 | 24.4 | 28.6 | 20.7 | 86.2 | SW quad. | 1 | 8.7 | Ci.-S. NE | Cu. N | 38.4 | Ω$^2$ a. ● p. |
| 15 | 57.20 | 26 | 29.3 | 23 | 90.3 | SW quad. | 1.7 | 9.8 | A.-S. | Fr.-N. NW | 2 | ●° a. d° ☇° p. |
| 16 | 56.90 | 25.7 | 26.9 | 23.8 | 91.5 | NW | 1.8 | 9.3 | Ci.-S., A.-Cu. | Cu.-N. NW | 1.8 | ●° d° a. Ω$^2$ p. |
| 17 | 57.37 | 26 | 28.9 | 23.1 | 89.8 | Variable | 1 | 7.2 | Ci.-S. E | Cu. W | 3 | Ω$^2$ a. ∞ ☇$^2$ p. |
| 18 | 57.82 | 25.2 | 28.5 | 23.6 | 94 | NNW, NW | .3 | 9.3 | Ci.-S. E | Cu.-N. NE | 5.1 | ☇° ●° a. d ☈ p. |
| 19 | 58.84 | 25.6 | 28.9 | 23.4 | 92 | Variable | .5 | 9 | Ci.,Ci.-S. E | Cu.-N. SE | 38.6 | Ω° a. ● p. |
| 20 | 59.79 | 24.9 | 27.3 | 22.7 | 92.2 | Variable | 1.2 | 10 | A.-Cu. E | Fr.-N., Cu.-N. ENE | 3.3 | ●° a. p. |
| 21 | 59.21 | 25.1 | 27 | 23 | 90.2 | NW quad. | 2.8 | 10 | Ci.-S., A.-Cu. | Cu.-N. N | 35.1 | d° a. p. |
| 22 | 58.30 | 25.7 | 29 | 22.8 | 88.3 | NW quad. | 1 | 9.3 | A.-Cu. SE | Cu.-N. NNW | 5.9 | ● d° a. ∞ ☈ p. |
| 23 | 59.24 | 26 | 29.8 | 23.5 | 87.8 | WNW | 1.5 | 8.3 | Ci.-S. S | Cu., Cu.-N. W | ------ | ●° a. ☈ d° p. |
| 24 | 60.41 | 26.3 | 29.9 | 23.5 | 80.5 | NW | 2 | 6.3 | Ci.-S. E | Cu. NW, W | ------ | ∞ Ω° p. |
| 25 | 59.69 | 26.6 | 30.2 | 23.3 | 81 | SW quad. | 1.3 | 2.7 | Ci. | Cu.,Cu.-N. W | ------ | Ω$^2$ a. ∞ Ω° p. |
| 26 | 59.08 | 26.8 | 30.5 | 24.8 | 82.7 | SW quad. | 1.3 | 3.8 | Ci. | Cu. WSW | ------ | Ω° a. p. |
| 27 | 58.74 | 26.9 | 30.6 | 24 | 79.8 | W quad. | 1.5 | 3.2 | Ci. | Cu. SW | ------ | Ω° a. ∞ d° p. |
| 28 | 58.77 | 26.7 | 29.8 | 23.6 | 83.8 | W | 1.2 | 6.5 | A.-Cu. NE | Cu., Cu.-N. | ------ | Ω° p. |
| Mean | 758.94 | 25.5 | 28.8 | 22.7 | 86.8 | ------------ | 1.5 | 7.2 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 370.2 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.48 | 26.4 | 30 | 23.1 | 68.2 | E | 9 | 3 | Ci. | Cu. ENE | ------ | ≡° Ω a. ∞ p. |
| 2 | 58.44 | 25.5 | 29.2 | 20.6 | 69.7 | N, E | 11.1 | 2.5 | Ci. | Cu. ENE | ------ | Ω a. ∞ p. |
| 3 | 58.88 | 26 | 30 | 20.5 | 69 | NE quad. | 8.9 | 4.2 | Ci.-S. | Cu., S.-Cu. ENE | ------ | ≡° Ω a. |
| 4 | 59.43 | 26.3 | 30.6 | 22 | 71.7 | NE quad. | 11.2 | 3.5 | Ci. | Cu. ENE | ------ | ≡° Ω a. |
| 5 | 59.12 | 27.2 | 31 | 22.9 | 69.3 | NE quad. | 11.9 | 5.2 | A.-Cu. | Cu., Cu.-N. ENE | ------ | ≡° Ω a. ☇ p. |
| 6 | 58.48 | 25 | 28.4 | 21 | 81.2 | NE quad. | 10 | 9 | ------------------ | Cu.-N. NE | 25.7 | ≡° Ω d a. ● p. |
| 7 | 59.06 | 23.2 | 24.5 | 22 | 91.8 | NE | 11.2 | 9 | Ci.-S., A.-Cu. | Cu.-N. N, ENE | 24.4 | ● a. p. ⌽ p. |
| 8 | 58.85 | 25.5 | 28.5 | 22.7 | 73.3 | NE | 11.2 | 4.8 | Ci.-S. | Cu. ENE | ------ | Ω a. |
| 9 | 58.99 | 25.4 | 30 | 21.8 | 75.5 | NE quad. | 10.8 | 4.7 | Ci. | Cu., Cu.-N. NE | ------ | Ω a. |
| 10 | 60.10 | 26.2 | 29.6 | 22.4 | 76.7 | E, NE | 9.9 | 2.8 | Ci. | Cu. NE | ------ | Ω a. p. |
| 11 | 60.92 | 25.8 | 29.8 | 21.5 | 77.3 | NE quad. | 7.2 | 5.8 | A.-Cu. E | Cu. ENE | ------ | Ω$^2$ a. ⌽ p. |
| 12 | 60.73 | 25.1 | 29 | 22.4 | 81.8 | ENE, E | 10.4 | 5.3 | A.-Cu E | Cu. NE | 20.8 | ≡° Ω a. ● ☇ p. |
| 13 | 60.32 | 25.1 | 29.3 | 21.8 | 75.7 | NE quad. | 9.8 | 5.3 | A.-Cu. E | Cu., Cu.-N. NE | ------ | ● a. ⌽ p. |
| 14 | 59.05 | 25.1 | 29.4 | 20.6 | 79 | Variable | 6.2 | 5.5 | A.-Cu. E, ENE | Cu., Cu.-N. NE | 5.1 | ≡° Ω a. ● ⌽ p. |
| 15 | 57.68 | 26.1 | 30 | 23.9 | 82.8 | Variable | 6.7 | 7.5 | Ci.-S. | Cu.-N. NNW | 6.4 | ≡° Ω ●° a. ⌽ p. |
| 16 | 57.20 | 25.9 | 29.6 | 23.5 | 85.7 | SE, E | 4.1 | 7 | Ci., Ci.-S. | Cu.-N. N | 4.3 | ≡° d a. ● ⌣ p. |
| 17 | 57.24 | 26.3 | 29.9 | 22.8 | 80.2 | E, ENE | 7.3 | 4.2 | Ci.-S. | Cu. NE | ------ | Ω d a. ☈ p. |
| 18 | 57.81 | 26.5 | 30.3 | 23.4 | 80.7 | E | 4.7 | 6.2 | Ci.-S. | Cu., S.-Cu. NE | ------ | ≡° Ω$^2$ a. ☈ a. p. |
| 19 | 59.04 | 24.9 | 26.9 | 23.6 | 88.2 | NE | 5.3 | 8.7 | Ci.-S. | Cu.-N. NE | 9.9 | ● d a. p. ⊤° p. |
| 20 | 59.74 | 26 | 29 | 23.5 | 80.7 | NE quad. | 8 | 8.5 | Ci.-S., A.-Cu. | Cu.-N. NE | 1 | d a. p. ☈ p. |
| 21 | 59.48 | 25.9 | 29.2 | 23.9 | 77 | NE, NNE | 10.7 | 7.5 | Ci.-S. | Cu.-N. N quad. | .5 | Ω ⌒ a. |
| 22 | 58.67 | 26.7 | 30 | 23.9 | 75.5 | N, NE | 8.2 | 6.7 | A.-Cu. E | Cu. NNW | 2.5 | Ω ●° a. |
| 23 | 59.61 | 25.9 | 30.4 | 22.7 | 80.2 | Variable | 5.6 | 5.5 | Ci. | Cu.-N. NNW | 2 | ⌽≡°⌒a.☈°p.●° |
| 24 | 60.79 | 25.4 | 30 | 22 | 73.7 | Variable | 6.6 | 3 | Ci. | Cu. N | ------ | Ω ≡° a. |
| 25 | 59.96 | 25.8 | 30.5 | 21.5 | 78 | SE, S | 6.6 | 2.8 | Ci. | Cu. N | ------ | ≡° Ω a. |
| 26 | 59.26 | 26.2 | 30.1 | 22.5 | 77.8 | ENE, E | 5.8 | 3.7 | Ci. | Cu. N, NW | .3 | Ω d a. |
| 27 | 58.92 | 25.8 | 30.9 | 21.6 | 82 | E quad. | 6.9 | 3.2 | Ci. | Cu. NW, NNW | 3.3 | Ω$^2$ a. ●° ⌒ p. |
| 28 | 58.98 | 26.1 | 30.6 | 22.8 | 80.5 | Variable | 6.5 | 3 | Ci. | Cu. N | ------ | Ω a. p. |
| Mean | 759.08 | 25.8 | 29.5 | 22.4 | 78 | ------------ | 8.3 | 5.3 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 106.2 | |

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[1] All the mean values given in these tables are deduced from six-daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | | | mm. | |
| 1 | 757.36 | 26.8 | 32.4 | 22.3 | 67.5 | NE quad. | 9.1 | 2.5 | Ci. | | Cu. | NE | ------ | Ω ≡° a. ∞ p. |
| 2 | 58.53 | 25.8 | ------ | 20.4 | 73 | NE | ------ | 3.2 | Ci. | | Cu. | | ------ | ∞ a. |
| 3 | 58.80 | 25.6 | 31.8 | 21.4 | 70.8 | NE | 13.5 | 5 | Ci. | | Cu. | | ------ | ∞ a. |
| 4 | 59.40 | 26.6 | 31.7 | 22.9 | 73.2 | NE quad. | 17.2 | 2.8 | Ci. | | Cu. | | ------ | ≡° a. |
| 5 | 59.53 | 26.4 | 31.5 | 22.5 | 69 | NE quad. | 20.2 | 4.3 | Ci. | | Cu. | NE | ------ | ∞ a. |
| 6 | 58.51 | 24.5 | 30.7 | 22.6 | 78.7 | NE quad. | 16.4 | 6.8 | Ci.-S., A-Cu. | | Cu. | | 0.6 | ∞ a. d ● p. |
| 7 | 58.78 | 24.1 | 27 | 22.4 | 87.8 | NE | 19.1 | 9.7 | Ci.-S. | | Cu.-N. | | 13.9 | d ● a. |
| 8 | 58.79 | 24.8 | 38 | 22 | 74 | NE | 20.2 | 6.3 | Ci., Ci.-S. | | Cu. | NE | ------ | |
| 9 | 58.96 | 25.1 | 29.9 | 21.5 | 77.8 | NE quad. | 19.2 | 4.8 | Ci. | | Cu. | NE | .5 | ≡° a. ψ p. |
| 10 | 60.36 | 25.1 | 30.3 | 21.8 | 81.7 | NNE | 15 | 7.5 | Ci. | | Cu. | NE | 1.8 | ● a. p. |
| 11 | 60.81 | 26.1 | 32.8 | 23.2 | 81.8 | NNE | 11.8 | 7.8 | Ci. | | Cu. | NE | ------ | d ● ψ p. |
| 12 | 60.56 | 25.9 | 30.4 | 22.6 | 77.8 | NE, NNE | 16.4 | 6.8 | Ci. | | Cu. | | 19 | ψ |
| 13 | 60.43 | 24.5 | 29.1 | 20.2 | 78.5 | NE | 17.8 | 8 | Ci.-S. | | Cu. | NE | ------ | ● a. ≡° p. |
| 14 | 59.69 | 24.5 | 30.3 | 21.5 | 82.5 | NNE | 11.3 | 7.7 | Ci. | | Cu. | NE | 16 | ● ≡° p. |
| 15 | 58.44 | 24.7 | 28.8 | 22.5 | 86.5 | NE quad. | 14.4 | 8.5 | Ci.-S. | | Cu. | NNE | .3 | ● a. |
| 16 | 57.74 | 26 | 29.6 | 23.6 | 81.2 | NE | 14.4 | 9.3 | Ci.-S. | | S.-Cu. | N | ------ | |
| 17 | 57.59 | 25.6 | 30.6 | 23.8 | 88.8 | NE | 11.4 | 7.7 | Ci.-S. | | Cu. | NNE | 4.1 | ● a. ●° ψ ↯° p. |
| 18 | 58.07 | 26.3 | 31.1 | 23.8 | 83.8 | NE | 10.2 | 8 | Ci.-S., A-Cu. | | Cu. | | .3 | Ω ●° a. ⊤ ↯ p. |
| 19 | 59.52 | 24.3 | 26.1 | 23 | 89.7 | NE | 16.8 | 10 | Ci.-S. | | Cu., Cu.-N. | | 19 | ≡° d. ● a. |
| 20 | 60.53 | 24 | 26.1 | 22.6 | 88.2 | NNE | 20.6 | 10 | Ci.-S. | | Cu.-N., Cu. | N | 1.5 | d a. p. ● a. |
| 21 | 60.16 | 24.7 | 29.1 | 22.8 | 84.8 | NNE | 19 | 10 | Ci.-S. | | S.-Cu. | N | ------ | d a. p. |
| 22 | 59.50 | 25.8 | 30.6 | 23.1 | 78.3 | NNE, NE | 13.2 | 7.2 | Ci.-S. | | Cu. | N | ------ | |
| 23 | 60.03 | 26.2 | 31.9 | 22.4 | 72.5 | NNE, NE | 11.6 | 5.5 | A.-Cu. | NW | Cu. | | ------ | Ω a. |
| 24 | 61.22 | 25.7 | 31.3 | 21.6 | 71.7 | NE | 14.6 | 3.8 | Ci.-S. | | Cu. | | ------ | Ω a. |
| 25 | 60.50 | 26.8 | 32.6 | 22.8 | 73 | NE | 11.6 | 3.7 | Ci. | | Cu. | N | ------ | Ω a. |
| 26 | 59.52 | 25.6 | 31.1 | 21.8 | 81.3 | NE quad. | 8.8 | 3.8 | Ci. | | Cu., Cu.-N. | | ------ | |
| 27 | 59.18 | 26.2 | 33.2 | 21.2 | 77.7 | NE quad. | 8.6 | 5.8 | Ci. | | Cu. | N | ------ | Ω a. |
| 28 | 59.27 | 27 | 31.9 | 23.6 | 72.3 | NE quad. | 8.4 | 5.7 | Ci. | | Cu. | N | ------ | |
| Mean | 759.35 | 25.5 | 30.4 | 22.4 | 78.7 | ------------ | 14.5 | 6.5 | ------------ | | ------------ | | ------ | ------------ |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | | ------------ | | 77 | ------------ |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | | | mm. | |
| 1 | 757.73 | 24.8 | 30.5 | 19.9 | 79.8 | Variable | 6.9 | 4.3 | Ci. | | Cu. | ENE, E | ------ | Ω ≡° a. |
| 2 | 58.72 | 23.9 | 30.5 | 17.4 | 80.5 | NW quad. | 6.9 | 2.2 | Ci. | | Cu. | | ------ | Ω |
| 3 | 59.01 | 24.8 | 31 | 18.5 | 80 | N quad. | 7 | 6.3 | Ci.-S. | E | Cu.-N. | ENE, NNE | ------ | Ω ≡° a. |
| 4 | 59.64 | 26.3 | 32.4 | 22 | 72.7 | N quad. | 7.6 | 5.8 | Ci. | | Cu.-N. | NNE, E | ------ | ≡° a. |
| 5 | 59.39 | 26.7 | 32.5 | 21.5 | 70.5 | NE | 7.1 | 6.3 | Ci. | | Cu. | NE, N | ------ | ≡° a. ⌒ p. |
| 6 | 58.45 | 24.4 | 28.5 | 22.7 | 91.8 | N quad. | 5.4 | 9.5 | Ci.-S. | | Cu.-N. | E | 28.9 | ≡° a. d. a. p. ⌈↯ p. |
| 7 | 59.41 | 23.5 | 26.4 | 22.1 | 94.2 | N quad. | 6.7 | 9.7 | A.-Cu., Ci.-S. | | N. | | 14 | d. a. p. ψ° |
| 8 | 59.10 | 25.2 | 30.5 | 20.1 | 78.8 | N quad. | 6.4 | 6.2 | Ci. | | Cu. | NE | ------ | ≡° a. |
| 9 | 59.23 | 23.8 | 28.5 | 18.3 | 88.3 | N | 5.6 | 7.8 | Ci.-S. | E | Cu.-N. | NE | 4.3 | Ω ≡° a. p. ⌈↯ p. |
| 10 | 60.33 | 25.4 | 30.9 | 21.8 | 86.3 | NE quad. | 5.8 | 7 | Ci. | | Cu. | NE, ENE | 9.5 | Ω ≡° d ⌈↯⌒ p ψ° |
| 11 | 61.19 | 25 | 30.4 | 20.9 | 88.8 | N, S | 5.8 | 8.2 | Ci. | E | Cu. | E | 3.8 | Ω ⌒ ⌈↯ ↯ d |
| 12 | 61.07 | 24.7 | 27.8 | 22.1 | 87.8 | NW quad. | 5.6 | 9.5 | Ci.-S. | | Cu.-N. | E | 4.5 | d a. p. |
| 13 | 60.44 | 24.6 | 30 | 21.8 | 80.3 | N quad. | 5.7 | 7.5 | Ci. | | Cu.-N. | NE, ENE | .3 | p p. |
| 14 | 59.09 | 23.8 | 29 | 18.6 | 89.7 | N quad. | 5.9 | 8.8 | Ci.-S., A.-Cu. | | Cu.-N. | NW by W | 5.4 | Ω a. d p. |
| 15 | 57.65 | 24.8 | 27.6 | 23.4 | 92 | N | 9.1 | 9.7 | Ci.-S. | | Cu.-N. | N | ------ | ↯ p. |
| 16 | 57.26 | 25.6 | 29.1 | 23.5 | 87.8 | N | 6.6 | 9.8 | Ci.-S. | | Cu.-N. | NE by N, NE | ------ | |
| 17 | 57.49 | 25.2 | 29.8 | 22 | 90 | N | 5.8 | 7 | Ci. | | Cu -N. | E | 11.7 | Ω° a. ⊤ ●° ↯ p. |
| 18 | 58.07 | 25.1 | 30.5 | 21.2 | 89.2 | N | 4.8 | 7 | Ci. | E | Cu.-N. | | .8 | Ω a. ⌈↯ p. ↯ p. |
| 19 | 59.07 | 24.6 | 28.5 | 21.8 | 91 | NW, N | 4.3 | 9 | Ci.-S. | | Cu.-N. | | 4.7 | ↯ a. p d p. |
| 20 | 60.13 | 24.6 | 29 | 22.8 | 92.5 | N | 5.5 | 10 | A.-Cu. | E | Cu.-N. | | 9.6 | p a. ●° p. |
| 21 | 59.50 | 24.6 | 28 | 22.5 | 87.8 | N | 8.1 | 9.7 | Ci.-S. | | Cu.-N. | ENE | .3 | |
| 22 | 58.66 | 24.8 | 29.5 | 22.7 | 88.2 | N | 8.5 | 8.8 | Ci.-S. | | Cu.-N. | N | 2.3 | Ω° a. d a. p. |
| 23 | 59.63 | 24.6 | 28.5 | 22 | 89.7 | N | 8.3 | 6.7 | Ci. | | Cu.-N. | NW | 3.1 | Ω° a. p a. p. ⌒ p. |
| 24 | 60.84 | 25.1 | 29.6 | 21.1 | 81.3 | NW, N | 7.5 | 3.8 | Ci. | | Cu. | N | .3 | Ω° a. |
| 25 | 60.28 | 24.3 | 28.7 | 21.4 | 92.5 | NW quad. | 4.6 | 8.7 | Ci., Ci.-S. | | Cu.-N. | WNW | 2.8 | ≡° p a. |
| 26 | 59.37 | 25.5 | 29.9 | 22.8 | 88.2 | NW quad. | ------ | 7.3 | Ci. | | Cu.-N. | W, WSW | ------ | d a. |
| 27 | 59.16 | 25 | 29.5 | 20.8 | 87.3 | NW quad. | 5.4 | 6.3 | Ci. | | Cu.-N. | NW | ------ | Ω° a. ⌒ p. |
| 28 | 59.14 | 25.6 | 30.3 | 21.9 | 86.3 | NW, N | 5.8 | 6.5 | Ci. | | Cu.-N. | NNW | ------ | |
| Mean | 759.25 | 24.9 | 29.6 | 21.3 | 86.2 | ------------ | 6.4 | 7.5 | ------------ | | ------------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | | ------------ | | 106.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 758.67 | 26.5 | 32.5 | 22.4 | 78.3 | S quad. | 0.7 | 4 | Ci. | Cu. E | ------ | Ω² a. p. |
| 2 | 59.61 | 26.1 | 32.8 | 21.8 | 74.3 | S | .8 | 2.5 | Ci. | Cu.-N. ENE | ------ | Ω² a. p. |
| 3 | 59.98 | 26.5 | 32.2 | 22.6 | 76.2 | WNW, NW | 1.2 | 5.2 | Ci. W | Cu. E, ENE | ------ | Ω² a. |
| 4 | 60.76 | 26.5 | 32.8 | 23.9 | 77.8 | N quad. | 1.2 | 7 | Ci. W | cu.,cu.-N.ENE,NE | 0.8 | Ω² ⌒ a. ●° ⌒² p. |
| 5 | 60.43 | 27 | 32.4 | 23.4 | 76.2 | NE | 1.5 | 8.2 | Ci.-S. W | Cu., Cu -N. ENE | 4.6 | d a. ● p. |
| 6 | 59.43 | 24.7 | 27.3 | 23 | 84.7 | NE quad. | 1 | 9.8 | ------ | Cu.-N., N. ENE | 82.1 | ● a. p. |
| 7 | 60.48 | 24 | 26.5 | 22.2 | 86.3 | E quad. | 1.7 | 9 | Ci. | N. ENE | 67.1 | ●² a. p. |
| 8 | 60.27 | 24.7 | 30 | 21.3 | 77 | NW quad. | .8 | 6 | Ci. WSW | Cu.-N. ENE | ------ | ○² a. p. Ω² p. |
| 9 | 60.08 | 24.8 | 28 | 21.5 | 85 | NW quad. | 1.3 | 4.8 | Ci. | Cu.-N. ENE | 22.1 | Ω a. ● a. p. Φ² p. |
| 10 | 61.20 | 26.2 | 31 | 22.8 | 82.7 | NW quad. | 1.2 | 6.7 | Ci. W | Cu. NE | .5 | Φ² ●° a. |
| 11 | 62.14 | 25.8 | 31.4 | 22.8 | 85.7 | S quad. | 1.2 | 8.5 | Ci.-S. WSW | Cu.-N. NE | 26.2 | ○° a. ● ⊤ p. |
| 12 | 62.17 | 24.7 | 28.8 | 22.4 | 88.3 | Variable | .8 | 10 | ------ | N. NE | 46.4 | d ● a. p. |
| 13 | 61.38 | 25.3 | 29.6 | 22.5 | 78.2 | N quad. | 1.2 | 6.7 | Ci. WSW | Cu.-N. NE | 4.8 | ● a. p. ψ² Φ² p. |
| 14 | 59.83 | 24.6 | 28.2 | 21.7 | 88.8 | NNW | 1.3 | 9 | Ci.-S. SW | Cu.-N. NE | 8.1 | ψ² Φ² a. ● ↙° d p. |
| 15 | 58.42 | 25.1 | 26.5 | 24.1 | 91.5 | N, NNW | 1.8 | 10 | ------ | N. N | 3.3 | ● a. d ψ² Φ° p. |
| 16 | 58.02 | 25.8 | 27.4 | 24.2 | 87.7 | NNW | .8 | 9.3 | Ci.,Ci.-S. | Cu.-N. N | .8 | ψ² Φ ●° a. d p. |
| 17 | 58.38 | 26.3 | 32 | 23.3 | 86.5 | NW quad. | .7 | 6.7 | Ci.-S. SW | Cu. ENE | .8 | ●° p. |
| 18 | 58.94 | 25.8 | 29.3 | 23.5 | 90.3 | NW quad. | .8 | 7.7 | Ci., Ci.-S. SW | Cu.-N. NE | .8 | ψ² Ω° a. ●° p. |
| 19 | 60.20 | 24.9 | 30.7 | 23.2 | 92.5 | NW | 1.2 | 8.8 | Ci.-S. SW | cu.-N., N. ENE,NE | 17 | ● p. |
| 20 | 61.11 | 24.4 | 27 | 23.1 | 92.7 | N quad. | 1.2 | 9.8 | ------ | N. NE | 27.9 | ● d a. p. |
| 21 | 60.76 | 24.1 | 26 | 22.8 | 92.5 | NW quad. | 1.5 | 9.8 | ------ | Cu.-N. NE | ------ | ● a. |
| 22 | 59.41 | 25.1 | 27.4 | 22.8 | 84.8 | NNW | 2.2 | 9.5 | Ci. | Cu.-N. N | 1.3 | ○² ● p. |
| 23 | 60.08 | 25.4 | 29 | 23.2 | 82.8 | NW, NNW | 2.3 | 8.5 | Ci. SW | N. N | 1 | d a. p. |
| 24 | 61.36 | 25.7 | 29 | 23.4 | 77.5 | NNW | 1.7 | 5.5 | Ci.-S. SW | Cu., Cu.-N. N | ------ | ● a. |
| 25 | 60.47 | 26.1 | 30.5 | 23.4 | 82.5 | WNW | 1.3 | 5.3 | Ci.-S. SW | Cu. N | ------ | |
| 26 | 59.48 | 26.2 | 30.3 | 23.8 | 83.5 | NW quad. | 1.7 | 5.8 | Ci. SW | Cu.,Cu.-N. NNW | .5 | ●° a. ⌒² p. |
| 27 | 59.65 | 26.1 | 29.9 | 23.2 | 83.3 | NW quad. | 1 | 7.2 | Ci.-S. | Cu. NW quad. | 1.5 | Ω ● a. d p. ⌒ |
| 28 | 59.77 | 27.2 | 32.3 | 24.2 | 80.7 | NW | .7 | 7.8 | Ci.-S. | Cu. N, NE | 2.5 | ⊤ ⌒² d ● p. |
| Mean | 760.09 | 25.6 | 29.7 | 22.9 | 83.9 | ------ | 1.2 | 7.5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 320.1 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.76 | 26.2 | 31.5 | 21.9 | 79 | E quad. | 5.2 | 4.3 | Ci. | Cu. SE | ------ | Ω° a. |
| 2 | 59.18 | 25 | 30.9 | 20.7 | 80.7 | NE | 4.8 | 2.8 | Ci. | Cu., Fr.-Cu. NE | ------ | Ω² a. |
| 3 | 59.57 | 25.5 | 31 | 21 | 80.5 | NE, SE | 6.2 | 5.3 | Ci. | Variable NE | ------ | Ω a. Φ p. |
| 4 | 60.23 | 26.7 | 30.8 | 23.8 | 79.5 | NNE | 10.5 | 6 | Ci. | Cu., N.-cf. NE | 1 | ●° p. |
| 5 | 60.60 | 26.7 | 30.4 | 24.9 | 74.2 | NE | 13.5 | 7 | Ci.-S. | N., N.-cf. NE | ------ | Φ p. |
| 6 | 59.35 | 26 | 31.2 | 23 | 82.7 | NE quad. | 9.9 | 8.3 | Ci.-S. | Fr.-N., N. NE | 51.7 | ⊏ ● p. |
| 7 | 59.64 | 25.5 | 29.8 | 22.8 | 80.7 | NE quad. | 17.4 | 8.5 | Ci.-S. | Fr.-N. E | .9 | ↙° ●° a. |
| 8 | 59.85 | 26 | 30 | 23.7 | 71.3 | NE | 12.6 | 8 | Ci.-S. | Fr.-N. NE | 1 | ●° a. Φ° ψ° p. |
| 9 | 60.10 | 26.3 | 30.1 | 24.2 | 72.2 | NNE | 16.4 | 6.7 | Ci.-S. | Cu., N. NE | ------ | d° p. |
| 10 | 61.15 | 25.8 | 30.4 | 23.3 | 82.8 | NNE | 17.3 | 8.7 | Ci.-S. NE | N. NE, N | 4.6 | d² ⌒ a. ●° a. p. |
| 11 | 61.48 | 26.3 | 30.2 | 24.4 | 86.2 | N quad. | 10.5 | 8.3 | Ci. N | N. N | 1.3 | ● a. Φ° p. |
| 12 | 61.43 | 26.4 | 30.8 | 23.7 | 82.5 | NE | 10.6 | 7.7 | Ci.-S. | Variable NE | 4.1 | d° a. ●° ⊤° Φ° p. |
| 13 | 61.34 | 25.7 | 29.8 | 22.8 | 73.2 | NE quad. | 15.2 | 7.8 | Ci.-S. | N. N, NE | ------ | ●° a. d° p. |
| 14 | 60.17 | 25.2 | 28.9 | 23.8 | 85.2 | N | 14.9 | 9.3 | Ci.-S. N | N. N | 7.9 | d° a. ●° a. p. |
| 15 | 59.03 | 26.3 | 30.7 | 24.7 | 82.8 | N | 25.4 | 9.7 | Ci.-S. N | N. N | .5 | ●° a. ⊕° ○° d° p. |
| 16 | 58.28 | 26.1 | 30.6 | 24.4 | 83.5 | N | 23.1 | 10 | Ci.-S. | N. N | .5 | ●° a. d° p. |
| 17 | 58.14 | 26.1 | 29.2 | 24.5 | 90 | N quad. | 17.6 | 7.8 | Ci. S. | N. N | .6 | ●° a. d° <° p. |
| 18 | 58.56 | 26.2 | 30 | 24 | 90 | N | 14.6 | 8 | Ci.-S. | N. N | 19.6 | ●° a. p. ⌒ a. < p. |
| 19 | 60.70 | 25.2 | 28.2 | 24.2 | 84 | N | 33.4 | 10 | Ci.-S. | Fr.-N. N | 1 | d° a. ●° p. |
| 20 | 61.97 | 24.2 | 27 | 23.1 | 89.5 | N | 32.4 | 10 | Ci.-S. | N. N | 7.3 | ● a. p. |
| 21 | 61.17 | 24.2 | 28.3 | 23.4 | 91.7 | NNE | 22.6 | 10 | Ci.-S. | N. NNE | 6.8 | ● a. p. |
| 22 | 60.18 | 25.6 | 29.8 | 24.3 | 86 | N | 18.4 | 7.2 | Ci.-S. N | N. N | 1.8 | p p. |
| 23 | 60.60 | 26.4 | 30.9 | 24 | 77.5 | NW | 13.5 | 6.5 | Ci., Ci.-S. | N., Fr.-N.NW, N | ------ | p d° a. |
| 24 | 61.68 | 26.1 | 30.8 | 23.8 | 76.7 | NW | 17.7 | 4.8 | Ci. | Cu. NW, NE | ------ | |
| 25 | 60.90 | 26 | 30.3 | 24.3 | 84.3 | NW | 16.1 | 8 | Ci.-S. | N. NW | 5.4 | d° p a. |
| 26 | 60 | 25.2 | 30.2 | 23.5 | 88.5 | NW | 14.1 | 9.7 | Ci.-S. | .N. NW | 16.9 | ●° a. p. |
| 27 | 59.67 | 25.6 | 29.9 | 23.3 | 87.3 | NW quad. | 10.3 | 7.3 | Ci., Ci.-S. | N. N, NW | 2.6 | ● a. p p. |
| 28 | 59.65 | 25.8 | 30.5 | 23.4 | 87.2 | N | 7.1 | 4.7 | Ci. | Variable N | .8 | ●° a. Ω° p. |
| Mean | 760.08 | 25.8 | 30.1 | 23.5 | 82.5 | ------ | 15.4 | 7.6 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 136.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 757.93 | 25.2 | 31.6 | 20.1 | 82.8 | N quad. | 1.2 | 4. | Ci. | S.-Cu. ENE | ------ | ⌓² a. |
| 2 | 58.95 | 24.7 | 30.7 | 20.3 | 80.8 | NNE | 1.2 | 2.3 | Ci. | Cu. NEbyE | ------ | ⌓ a. |
| 3 | 59.38 | 24.6 | 31.7 | 19.1 | 83 | NE quad. | 1.3 | 4 | Ci.-S. | S.-Cu. NE | ------ | |
| 4 | 60.11 | 25.6 | 31.8 | 21.7 | 83.5 | NE, ENE | 1.3 | 4.8 | Ci.-S. SEbyS | Cu. NEbyE | 3 | ⌓ a. p° d p. |
| 5 | 60.02 | 25.5 | 31.2 | 21.5 | 80.8 | NE | 1.3 | 4.8 | Ci.-S. | S.-Cu. NE | ------ | ⌓ ≡ a. |
| 6 | 58.93 | 24.2 | 29.3 | 21.3 | 90.2 | NE | 1.2 | 8.2 | Ci.-S. | S.-Cu. NE quad. | 29.5 | ≡° p. a. d° ● p. |
| 7 | 59.61 | 24.5 | 30.4 | 21.5 | 82.5 | NE quad. | 1.5 | 7.2 | A.-Cu. | S.-Cu. NE | ------ | d° a. ⊕ p. |
| 8 | 59.84 | 23.5 | 28.8 | 20.1 | 82.7 | ENE | 1.3 | 5 | Ci.-S. NEbyN | S.-Cu. NNE | ------ | ≡° ⌓ a. ⊕ p. |
| 9 | 59.57 | 23.9 | 30.4 | 19 | 87.3 | NE | 1.7 | 4.2 | Ci. | S.-Cu. NNE, NE | 8.1 | ⌓ a. p° ⊕ p. |
| 10 | 60.61 | 25.2 | 31.3 | 21.7 | 88.5 | NE quad. | 1.3 | 7.5 | A.-Cu. | S.-Cu. NE | 16.7 | ●° a. p. p° p. |
| 11 | 61.46 | 25.1 | 30.8 | 22.3 | 88 | NE | 1 | 8.5 | A.-Cu.,Ci.-S, ESE,SE | S.-Cu. NE, SE | 9.4 | ●° a. ● < ⊍ p. |
| 12 | 61.52 | 24.7 | 29.3 | 22 | 89.2 | NE, E | 1.2 | 8 | Ci.-S., A.-Cu. | S.-Cu. E, NE | 14.3 | ⊕ d° p. a. ● ⊕ p. |
| 13 | 61 | 24.2 | 30.6 | 19.4 | 82.2 | NE quad. | 1.5 | 5.5 | Ci.-S. SE | Cu. NE | ------ | ≡° a. d p. |
| 14 | 59.31 | 24.4 | 29.5 | 20.2 | 88.3 | NE quad. | 1.2 | 9 | Ci.-S. | S.-Cu. NE | 9.4 | ⊕ a. d p. |
| 15 | 57.97 | 24.4 | 26.2 | 23.1 | 92.8 | N | 1 | 10 | A.-Cu. | N. NE. N | 7.4 | ●° d ° a. p. |
| 16 | 57.68 | 24.1 | 25.9 | 22.8 | 95.7 | NNE | 1 | 9.3 | A.-Cu. | N. N | 41.7 | d° a. ● a. p. |
| 17 | 57.70 | 25.2 | 32.4 | 22.5 | 90.8 | NE | 1 | 7.7 | A.-Cu. S | S.-Cu. NE | 15 | ● ⊤° < p. |
| 18 | 58.24 | 25.6 | 31.2 | 22.3 | 89.5 | NNE | 1.2 | 6.2 | Ci.-S. | Cu. ENE | 1.5 | ⊕ a. ⊤ d° < p. |
| 19 | 59.60 | 24.9 | 30 | 23 | 89.5 | NE quad. | 1.2 | 8.8 | A.-Cu. E | N. N | 47 | ● d p. |
| 20 | 60.61 | 24.1 | 27.6 | 22.6 | 90.8 | NE | 1.5 | 9.8 | A.-Cu. | N. NE | 80.3 | ● a. p. |
| 21 | 60.33 | 23 | 24 | 22.3 | 93 | NE quad. | 1 | 10 | A.-Cu. | N. NNE | 49.6 | ● a. p. d p. |
| 22 | 58.93 | 24.2 | 27.6 | 22.7 | 92 | N, NE | 1.5 | 9.7 | A.-Cu. | N. NNE | 3.6 | d° a. p. |
| 23 | 59.69 | 24.5 | 29.4 | 21.4 | 90.2 | N | 1.3 | 8.3 | Ci.-S. | S.-Cu. N | 4.5 | d p. |
| 24 | 60.75 | 24.5 | 30 | 20.1 | 85 | N | 1.5 | 5.2 | Ci.-S. | S.-Cu. N | 1.5 | d° p. |
| 25 | 59.62 | 25.6 | 30.7 | 22.9 | 85.2 | NW quad. | 1.7 | 6.5 | Ci.-S. | S.-Cu. NW | ------ | d° < p. |
| 26 | 58.77 | 25.8 | 31.5 | 23.4 | 87.5 | NW, NE | 1.3 | 8 | Ci.-S. | S.-Cu. NW quad. | 4.3 | d° a. |
| 27 | 59.14 | 24.9 | 27.7 | 23.2 | 90.7 | NE | 1 | 8.8 | A.-Cu. | S.-Cu. NNW | 1.1 | ●° a. d p. |
| 28 | 59.15 | 25.6 | 30.9 | 23.1 | 88.3 | NE | 1 | 5.5 | Ci.-S. | S.-Cu. N | 9.4 | d° a. ●° p. |
| Mean | 759.52 | 24.7 | 29.7 | 21.6 | 87.5 | ------------ | 1.3 | 7 | ---------------- | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ---------------- | ------------------ | 357.3 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 4.2 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.12 | 26.9 | 30.9 | 21.8 | 82 | E | 8.5 | 2.7 | Ci. | Cu.-N.,Fr-Cu.,ENE E | ------ | |
| 2 | 59.20 | 25.3 | 30.9 | 20.9 | 86.2 | E, SE | 4.8 | 1.2 | Ci. | Cu. | ------ | ≡° a. |
| 3 | 59.73 | 27 | 31.9 | 21.8 | 80.2 | NE | 8.1 | 3 | Ci. | Cu. ENE | ------ | |
| 4 | 60.70 | 26.4 | 31.7 | 22 | 84 | NE | 11.4 | 4.7 | Ci. | Cu. E | 14 | ● ⌒² p. |
| 5 | 60.68 | 26.9 | 30.6 | 23.9 | 76.7 | NE quad. | 15.1 | 6 | Ci.-S. | Cu. ENE | 1 | d° p. |
| 6 | 59.50 | 26 | 29.1 | 23.5 | 85.3 | NE quad. | 19.5 | 8.3 | Ci.-S. | Cu-N. E | 19.8 | ●° a. p. |
| 7 | 60.18 | 26.4 | 28.4 | 22 | 80.9 | ENE | 24.8 | 6.3 | A -Cu. NE | Cu-N. NE, ENE | 2.5 | ● d² a. |
| 8 | 60.02 | 26.5 | 29.3 | 23.6 | 76.2 | ENE | 19.3 | 4.8 | Ci.-S. | Cu-N., Cu.NE, ENE | ------ | ≡° a |
| 9 | 60.11 | 26.9 | 30.2 | 24.4 | 78.5 | NE | 19 | 6.2 | Ci.-S. | Cu. NE | ------ | |
| 10 | 61.16 | 25.6 | 28.2 | 23.5 | 90.2 | NE | 16.8 | 5.3 | Ci.-S. | Cu.-N. NE, ENE | 47.8 | ● a. d p. |
| 11 | 61.77 | 25.6 | 28.8 | 23.1 | 91.8 | NE | 9.6 | 7.8 | Ci.-S. | N. ESE | 19.6 | ● a. p. < ⊤ p. |
| 12 | 6 . 86 | 24.8 | 28.5 | 22.5 | 92.8 | E quad. | 16.3 | 9.2 | Ci.-S. | N. ENE, NE | 25.4 | ● a. p. |
| 13 | 61.38 | 25.2 | 29.7 | 22.7 | 86.2 | NE | 14.1 | 6.3 | Ci.-S. | Cu., Cu.-N. NE, ENE | 10.1 | ≡° a |
| 14 | 59.92 | 25 | 27.9 | 22.6 | 93.3 | NE | 15.9 | 9.5 | Ci.-S. | N. ENE | 12.2 | ● a. p. |
| 15 | 58.80 | 24.9 | 27.7 | 23.5 | 93.7 | NE | 16.2 | 10 | Ci.-S. | Fr-N. NNE, NE | 8.2 | ● a. p. |
| 16 | 58.08 | 25.2 | 27.6 | 23.5 | 92.2 | NE | 14.4 | 9.3 | Ci.-S. | Fr.-N. NNE | 16 | ● a. p. |
| 17 | 57.92 | 26.1 | 29 | 23.8 | 93.2 | NE | 10.5 | 7.3 | Ci.-S. | Fr.-N. NNE | ------ | ● a. <° p. |
| 18 | 58.62 | 25.5 | 28.8 | 22.2 | 94.5 | NE | 5.3 | 6.3 | Ci.-S. | Cu.-N NE | 65 | ≡° d a. ● a. p. |
| 19 | 60.46 | 23.4 | 24.6 | 22.4 | 94.3 | NNE | 25.4 | 10 | Ci.-S. | Fr.-N. NNE | 27.4 | ●² a. ●° p. |
| 20 | 61.74 | 23.5 | 24.4 | 22.4 | 96.2 | NNE, NE | 16.6 | 10 | Ci.-S. | Fr.-N. NNE | 58.2 | ● a. p. |
| 21 | 61.24 | 23.8 | 24.5 | 22.7 | 95.7 | NE, ENE | 10.6 | 10 | Ci.-S. | Fr-N., N. NE | 23.9 | ● d a. p. |
| 22 | 59.72 | 24.7 | 28.6 | 22.5 | 89.8 | NE | 9.9 | 8 | Ci.-S. | Cu.-N. N | ------ | ● a. d° p. |
| 23 | 60.19 | 25.5 | 29.5 | 21.5 | 85 | E quad. | 7.6 | 4.2 | Ci.-S. | Cu.-N. NNE, N | ------ | ≡° a |
| 24 | 61.04 | 25.5 | 31 | 19.4 | 85.1 | NE | 8.8 | 3.5 | Ci., A-Cu. | Cu. N | .5 | ●° p. |
| 25 | 60.36 | 24.8 | 28.9 | 22.5 | 93 | NE | 7.1 | 7.7 | Ci.-S. | N., Fr-N. N, NNE | 16.8 | ● a. p. <° p |
| 26 | 59.42 | 24 | 26.6 | 22.4 | 94 | NE | 4.4 | 8 | Ci.-S. | N. NNE | 9.2 | ● d a. d² p. |
| 27 | 59.36 | 25.3 | 28.5 | 22.5 | 92.5 | NE | 5.6 | 6.7 | Ci.-S., A.-Cu. | Fr-N., NNE | .8 | d a. |
| 28 | 59.46 | 25.7 | 30.8 | 20.7 | 91.5 | NE | 4.9 | .8 | ------------------ | Cu. | ------ | ≡° a. |
| Mean | 760.03 | 25.4 | 28.8 | 22.5 | 88.4 | ------------ | 12.5 | 6.5 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ------------------ | ------------------ | 378.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea,4 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.92 | 26.9 | 31.2 | 21.9 | 79.8 | Variable | 7.3 | 3.8 | Ci. | S.-Cu. NE | ------ | |
| 2 | 59.17 | 25.4 | 29.7 | 20.4 | 82.8 | SW | 10.4 | 4 | Ci. | S.-Cu. NE | ------ | Ω² ≡ a. |
| 3 | 59.97 | 26.4 | 30.6 | 20.3 | 77.2 | NE, E | 12.8 | 3.3 | Ci. | S.-Cu., Cu. NE | ------ | |
| 4 | 60.91 | 26.9 | 29.5 | 24.4 | 77.8 | NE | 17.6 | 8.7 | A.-Cu. NNE | S.-Cu. NE | 2.8 | |
| 5 | 61.46 | 25.4 | 26.2 | 21.7 | 83.3 | N | 28.4 | 10 | Ci.-S., Ci. | S.-Cu. NE | 25.6 | ● a. p. |
| 6 | 60.29 | 24.8 | 26.7 | 22 | 85.5 | NE | 21.8 | 7.3 | A.-Cu. NE | S.-Cu., N. NE | 18.3 | ●° a. p. |
| 7 | 60.59 | 25.7 | 27.7 | 22.6 | 75.7 | NE | 31.8 | 9.8 | A.-Cu. NE | S.-Cu. NE | ------ | ↯° a. d° p. |
| 8 | 60.35 | 25.9 | 28.4 | 22.5 | 71.8 | NE | 22.8 | 9.3 | A.-Cu. NE, ENE | S.-Cu. NE | .3 | d² a. Ф° p. |
| 9 | 60.73 | 26.2 | 27.1 | 23.4 | 73.5 | NE | 42.2 | 7.8 | Ci. | S.-Cu. NE | 5.8 | ↯° ●° a. p. Ф° p. |
| 10 | 62.53 | 24.9 | 26.1 | 21.5 | 78.7 | NE | 40.8 | 9.7 | A.-Cu. NE, ENE | S.-Cu. NE | 29.4 | ↯° ●° a. p. |
| 11 | 62.39 | 24.8 | 26.5 | 21.8 | 88.2 | NE | 25.8 | 10 | A.-Cu. NE | N. NE | 16 | ↯° ● a. ●° p. |
| 12 | 62.22 | 25.4 | 27.7 | 22 | 84 | NE quad. | -------- | 8.3 | A.-Cu. E | S.-Cu. NE | 12.7 | ● a. p. d° ↯° p. |
| 13 | 62.05 | 25.2 | 26.9 | 21.4 | 74.3 | NE | 33.9 | 9.2 | A.-Cu. ENE, E | S.-Cu. NE | 11.4 | d² ● a. d° Ф° Ѱ° p. |
| 14 | 61.22 | 25.4 | 27 | 22 | 79.8 | NE quad. | 31.4 | 8.2 | A.-Cu. NE | S.-Cu. NE | 1.3 | ●° a. d² Ф° Ѱ° p. |
| 15 | 60.17 | 26 | 27 | 24 | 77.8 | N | 38 | 7 | Ci. | S.-Cu. NE | ------ | Ф° a. d° p. |
| 16 | 59.54 | 25.6 | 26.5 | 23.1 | 81.3 | N | 43.6 | 9.2 | Ci. | S.-Cu. NE | 3.1 | Ф° Ѱ° a. ↯° ●° a. p. |
| 17 | 59.12 | 25.5 | 27.2 | 23.4 | 86 | N | 35.4 | 8.5 | Ci. | S.-Cu. NE | 13.1 | Ф° a. ● a. p. |
| 18 | 59.96 | 24.5 | 25.5 | 22.7 | 90 | N | 44.8 | 10 | Ci.-S. | N. NE | 30.8 | ↯° ●° a. p. |
| 19 | 62.42 | 24.9 | 25.2 | 21.7 | 74.8 | NNE | 56.2 | 10 | Ci.-S. | S.-Cu., N. NE | 2.5 | ↯° ●° a. d° ↯ p. |
| 20 | 63.28 | 24.7 | 25.2 | 21.9 | 78 | NE, N | 48.4 | 10 | A.-Cu. SE | S.-Cu. NE | 7.3 | ●° a. ↯° d a. p. |
| 21 | 62.68 | 24.2 | 25.2 | 21.6 | 80.2 | NE quad. | 43.8 | 10 | Ci.-S., Ci. | S.-Cu., N. NE | 6.9 | ↯° a. p. ●° a. d° p. |
| 22 | 61.09 | 24.5 | 25.7 | 21.6 | 77.5 | N | 38.1 | 7.7 | A.-Cu. NE | S.-Cu. NE | ------ | ↯° a. |
| 23 | 61.34 | 25.6 | 27.4 | 23.5 | 75 | N | 29.2 | 3 | Ci. | Cu. N | ------ | Ф° d° a. |
| 24 | 62.78 | 25.2 | 26.9 | 22.7 | 76 | N | 39.6 | 7.2 | A.-Cu. NE | S.-Cu. NE | 4.3 | ●° a. ↯° d° a. p. |
| 25 | 62.06 | 24 | 25.3 | 22 | 88.2 | N quad. | 39.1 | 9.8 | A.-Cu. NE | N. NE | 26.2 | ↯° a. ●° a. p. |
| 26 | 60.82 | 23.4 | 24.4 | 21.5 | 87.5 | N | 29.6 | 9.5 | Ci.-S. | N. NE | 9.7 | ●° a. p. |
| 27 | 60.09 | 24.7 | 26.2 | 21.5 | 85.5 | N quad. | 21.4 | 6.7 | A.-Cu. NE | S.-Cu. NE | 3.9 | ●° d° a. ⌒° p. |
| 28 | 59.92 | 24.9 | 27.5 | 21.2 | 82.3 | N quad. | 10.9 | 1.7 | Ci. | Cu. NE | ------ | Ф² d° a. |
| Mean | 760.97 | 25.2 | 27 | 22.2 | 80.4 | ------------ | 31.3 | 7.8 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 231.4 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.11 | 25.8 | 31.5 | 22 | 86.2 | SE, NE | 4.8 | 2.8 | Ci. | Cu. E | ------ | Ω² a. Ω p. |
| 2 | 59.23 | 25 | 30.8 | 21 | 86.8 | NE | 4.4 | 1 | Ci. | Cu. E | ------ | Ω² a. Ω p. |
| 3 | 60.06 | 25.5 | 30.9 | 20.5 | 83.5 | NE, E | 5.5 | 2.8 | Ci. | Cu. E | .3 | Ω a. p. |
| 4 | 61.16 | 25.3 | 30.8 | 22 | 86.7 | NE | 9.1 | 8.2 | Ci., Ci.-S. | Cu. NE | 8.6 | Ω a. ● p. |
| 5 | 61.34 | 26 | 29.7 | 22.8 | 85.3 | NE | 13.5 | 7.8 | Ci.-S. | Cu. NE | 6.9 | ● a. p. |
| 6 | 60.27 | 24.9 | 26.7 | 22.9 | 87.8 | ENE | 25.4 | 9.3 | Ci.-S. | S.-Cu. ENE, NE | 37 | ● d a. p. |
| 7 | 60.85 | 25.5 | 29.2 | 23 | 81.2 | ENE | 25.7 | 10 | Ci.-S. | S.-Cu. NE | 19.3 | ●° a. p. |
| 8 | 60.59 | 25.7 | 29.3 | 22.3 | 77.5 | ENE | 17.3 | 7.2 | Ci.-S., Ci. | Cu. ENE | ------ | d ● a. |
| 9 | 61.01 | 26 | 29.3 | 24.3 | 80.8 | NE quad. | 22.6 | 7.3 | Ci., Ci.-S. | Cu. NE | 1 | ●° p. |
| 10 | 62.57 | 25.1 | 26.8 | 23 | 88 | NNE | 22.9 | 10 | Ci.-S. | S.-Cu., Cu. NNE | 30.3 | ● a. p. |
| 11 | 62.40 | 24.3 | 25.8 | 22.8 | 94.3 | ENE | 15.5 | 10 | Ci.-S. | S.-Cu., N. NE | 88.3 | ● a. p. |
| 12 | 62.46 | 25.9 | 29.3 | 22.9 | 85.8 | ENE | 20.7 | 8.8 | Ci.-S. | S.-Cu., Cu. ENE | 15.5 | ● a. p. Ф p. |
| 13 | 62.25 | 25.8 | 29.5 | 22.5 | 76 | NE | 21.9 | 7.2 | A.-Cu. ENE | Cu. NE | 9.1 | Ω° a. ●° a. p. |
| 14 | 61.13 | 25.9 | 28.8 | 23.3 | 80.8 | NE | 18.6 | 10 | Ci -S. | Cu. NE | 1.8 | ●° a. p. ⌒° d° p. |
| 15 | 60.14 | 25.6 | 27.1 | 24 | 82.8 | N | 19.4 | 10 | Ci.-S. | S.-Cu. N | 6.6 | Ф a. d ●° a. p. |
| 16 | 59.40 | 25.1 | 26.9 | 23.7 | 90.8 | N quad. | -------- | 10 | Ci.-S. | S.-Cu. N | 19.6 | d ● a. p. |
| 17 | 59.05 | 25.6 | 29.5 | 23.9 | 91.3 | NNE | 19.4 | 10 | Ci.-S. | S.-Cu., Cu. N quad. | 28.8 | d ● a. p. |
| 18 | 59.62 | 25.1 | 27.4 | 23 | 91.5 | NNE | 24.4 | 10 | Ci.-S. | S.-Cu. NNE | 87.9 | d a. p. ● p. |
| 19 | 62.80 | 24.2 | 25.4 | 22.5 | 85 | NNE | 33.8 | 10 | Ci.-S. | Cu.-N. NNE | 5.3 | ● a. p. |
| 20 | 63.40 | 25 | 26.8 | 23 | 80.8 | NNE | 27.8 | 10 | Ci.-S. | S.-Cu. NNE | 11.7 | ●° a. p. |
| 21 | 62.70 | 24.1 | 26.2 | 22.7 | 88.2 | NE | 26.4 | 10 | Ci.-S. | Cu.-N. NE | 20.6 | ● a. p. |
| 22 | 61.15 | 24.1 | 26.6 | 22.2 | 86.7 | N | 15.3 | 10 | Ci.-S. | S.-Cu. N | 1.5 | ● a. p. |
| 23 | 61.48 | 25.6 | 29.2 | 24.2 | 80.3 | N quad. | 15.5 | 9 | Ci.-S. | Cu. N | ------ | d° a. p. |
| 24 | 62.73 | 25 | 28 | 23.2 | 85.3 | N | 17.9 | 8.2 | Ci., Ci.-S. | Cu. N | 29.5 | ● a. p. |
| 25 | 61.74 | 24.6 | 26.5 | 22.9 | 90.5 | NNE | 20.9 | 10 | Ci.-S. | S.-Cu. NNE | 28.2 | ● a. p. |
| 26 | 60.42 | 23.7 | 25.2 | 22.4 | 92.5 | NNE | 14.6 | 10 | Ci.-S. | N. NNE | 42.2 | ● a. p. |
| 27 | 60.09 | 25.2 | 29.4 | 22.3 | 88.3 | N | 9.6 | 8.5 | Ci.-S. | Cu. NNE | 1.3 | ● a. d Ω p. |
| 28 | 59.88 | 24.7 | 30.2 | 20.6 | 88.7 | ENE, NE | 4.6 | 1 | Ci. | Cu. N | ------ | Ω² a. |
| Mean | 761 | 25.2 | 28.3 | 22.7 | 85.8 | ------------ | 17.7 | 8.2 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 501.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi = 15° 22' N$; $\lambda = 120° 53' E$; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 757.46 | 26.4 | 33 | 20.5 | 74.7 | E quad. | 1.2 | 4.2 | A.-Cu. SE | Cu. E | ------ | Ω ≡° a. |
| 2 | 58.72 | 26.8 | 32.6 | 21.4 | 75.3 | NW, NE | 1.2 | 5.5 | Ci. | Cu. N, NE | ------ | Ω ≡° a. |
| 3 | 59.55 | 26.2 | 32.6 | 20.6 | 76.4 | NE quad. | 1.3 | 5.3 | Ci. | Cu. NE | 4.6 | ≡ Ω² a. ● p. |
| 4 | 60.82 | 25.6 | 31.7 | 20.6 | 76.7 | E, NW | 1.5 | 6.2 | Ci. | Cu. NE | ------ | ≡ a. ≤ p. |
| 5 | 61.70 | 25.2 | 29.4 | 22.2 | 77.3 | NE quad. | 1.7 | 7.8 | Ci.-S. | Cu. NE | .3 | ⊕ p. |
| 6 | 60.43 | 24.5 | 28.7 | 21.6 | 75.5 | NE quad. | 2.2 | 8.2 | Ci.-S. | N. NE | .8 | d a. p. ⊕ p. |
| 7 | 60.54 | 24.6 | 29.4 | 20.9 | 66.3 | E, NW | 2.3 | 7.3 | A.-Cu. SE | Cu. E | ------ | Ω a. |
| 8 | 60.31 | 24.4 | 29.7 | 21.5 | 66.7 | NE | 2.3 | 7 | A.-Cu. SE, NNW | Variable E | ------ | |
| 9 | 60.57 | 24.5 | 30.5 | 20 | 66.2 | NE quad. | 2.3 | 4.5 | A.-Cu. WNW | Cu. NE | ------ | Ω p. |
| 10 | 62.16 | 24.4 | 31.1 | 18.6 | 65.5 | E quad. | 2.2 | 3.7 | Ci. SE | Cu. | ------ | Ω a. |
| 11 | 62.67 | 23.6 | 30.2 | 18.7 | 78.7 | NW, NE | 1.7 | 7.8 | A.-Cu. NE | N. E | 18.1 | Ω° a. ● p. |
| 12 | 62.34 | 24 | 28.3 | 21.8 | 82.2 | NW, ENE | 1.7 | 8.7 | A.-Cu. NE | N. E | 1.6 | d a. ●° ⊕° p. |
| 13 | 61.84 | 24.2 | 28.6 | 20.6 | 69.8 | ENE | 1.7 | 5.7 | A.-Cu. NE | Cu. E | ------ | d° a. Ω ⊕ p. |
| 14 | 61.14 | 24.4 | 29.8 | 18.5 | 73.7 | NE | 1.3 | 6.3 | A.-Cu. | Cu. ENE | ------ | Ω² a. |
| 15 | 59.90 | 25.2 | 31.3 | 19.5 | 71.8 | NE, NW | 1.5 | 5.2 | Ci. SE | Cu. NE | ------ | Ω² a. |
| 16 | 59.25 | 25.5 | 31.6 | 20.1 | 69.2 | NE quad. | 2.2 | 4.5 | A.-Cu. NE | Cu. ENE | ------ | Ω² a. |
| 17 | 59.05 | 25.6 | 32 | 19.9 | 73.8 | NE, NNW | 1.2 | 4.7 | A.-Cu. NE | S.-Cu. NE | ------ | Ω² a. |
| 18 | 59.73 | 25.6 | 31.3 | 21.4 | 72.9 | NE | 2.2 | 4.7 | A.-Cu. NE | S.-Cu. N | ------ | Ω a. |
| 19 | 61.98 | 24.2 | 29 | 20.6 | 69 | NE | 2.5 | 6 | Ci.-S. SE | Variable NE quad. | ------ | Ω a. d° ↙° p. |
| 20 | 63.08 | 24.4 | 29.1 | 20.5 | 62.3 | NE quad. | 2.7 | 8 | Ci.-S. SE | Cu. NE, NNE | .3 | d° a. |
| 21 | 62.37 | 23.8 | 29.4 | 19.9 | 69.8 | NE quad. | 2.3 | 5.2 | Ci. SE | S.-Cu. NNE | ------ | Ω a. |
| 22 | 60.84 | 24.4 | 31.4 | 18.1 | 63.8 | NW | 1.7 | 3.7 | Ci. SE | S.-Cu. NE | ------ | Ω a. |
| 23 | 61.05 | 24.2 | 31.8 | 18.4 | 70.4 | NW | 1.5 | 4 | Ci. | Cu. NE | ------ | Ω a. |
| 24 | 62.44 | 24 | 31.2 | 17.9 | 69.8 | E quad. | 2 | 2.8 | Ci. | Cu. NE | ------ | Ω a. |
| 25 | 61.90 | 25 | 31.3 | 19 | 70.2 | NNW | 2 | 6 | A.-Cu. ENE | N., Cu. NE | ------ | Ω a. |
| 26 | 60.60 | 24.5 | 30.2 | 21.4 | 81.5 | NNW | 1.5 | 8.8 | Ci.-S. | N. NNE, N | 1.3 | Ω a. d° p p. |
| 27 | 60.05 | 25 | 30.2 | 21.6 | 79.7 | NW | 1.7 | 7.3 | A.-Cu. ENE | N. NE | ------ | d° a. |
| 28 | 59.70 | 25 | 31.7 | 20 | 77.2 | NW quad. | 1.8 | 4.8 | Ci., A.-Cu. | Cu. NNW | ------ | Ω² ≡° a. |
| Mean | 760.79 | 24.8 | 30.6 | 20.2 | 72.4 | ------------ | 1.8 | 5.9 | ---------------- | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ---------------- | ------------------ | 27 | |

### DAGUPAN.

[$\phi = 16° 03' N$; $\lambda = 120° 20' E$; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.22 | 27.2 | 35.5 | 22 | 82.4 | Variable | 9.3 | 4.5 | ------------------ | Cu., S.-Cu. S | 5.1 | ≡° Ω a. ≤ T° ● p. |
| 2 | 58.68 | 26.7 | 30.7 | 23.7 | 86.5 | NW | 11.1 | 4 | ------------------ | S.-Cu. NE | ------ | ≡° a. |
| 3 | 59.41 | 26.2 | 30.1 | 22.6 | 85.5 | NW | 13.9 | 3 | Ci., A.-Cu. | Cu., S.-Cu. | ------ | Ω a. |
| 4 | 60.61 | 25.7 | 29.9 | 21.5 | 85.7 | Variable | 9.2 | 3.8 | Ci. | Cu., S.-Cu. | ------ | ≡° Ω a. d° p. |
| 5 | 61.22 | 26.2 | 32.4 | 22.5 | 77.7 | SE quad. | 9.3 | 8.5 | A.-Cu. | S.-Cu. E | ------ | |
| 6 | 60.09 | 25.7 | 30.5 | 22.6 | 77.2 | SE quad. | 9.6 | 8 | A.-Cu. | S.-Cu. E, ENE | ------ | ⊍° p. |
| 7 | 59.98 | 26.7 | 33.8 | 22 | 63.3 | SE, S | 15.4 | 9 | A.-Cu. | S.-Cu. | ------ | |
| 8 | 59.77 | 26 | 32.5 | 22.6 | 69.3 | SE quad. | 11 | 9.2 | A.-Cu. SW | S.-Cu. ENE | ------ | |
| 9 | 60.08 | 25.7 | 33.8 | 21.2 | 70.2 | S, N | 12.3 | 3.7 | Ci. | Cu., S.-Cu. | ------ | ⊕ p. |
| 10 | 61.83 | 25.3 | 31.6 | 20.5 | 73.7 | S, NNW | 11.8 | 1.7 | Ci. | Cu. | ------ | ⊍ ⊕ p. |
| 11 | 62.44 | 24.9 | 30.1 | 19.5 | 81.5 | Variable | 11.2 | 5.2 | Ci. | S.-Cu. | .3 | ⌒² d° p. |
| 12 | 61.79 | 25.7 | 31.1 | 22.4 | 83.2 | SE, S | 12.2 | 9.7 | A.-Cu. | S.-Cu. SE, ESE | ------ | ⊕ d° p. |
| 13 | 61.20 | 26.6 | 33.8 | 21.8 | 68.3 | S | 14.7 | 6.5 | A.-Cu. | S.-Cu. E | ------ | ⌒ d° a. |
| 14 | 61.01 | 25.6 | 31.7 | 19 | 79.5 | S, NW | 11.1 | 3.2 | Ci. | Cu., S.-Cu. | ------ | ⊍° ⊕ p. |
| 15 | 60.06 | 25.4 | 30.1 | 20.4 | 85 | NW | 9 | 3.7 | Ci., Ci.-S | Cu., S.-Cu. | ------ | ≡° a. |
| 16 | 59.15 | 25.5 | 31.4 | 21.1 | 83.5 | NW, S | 9 | 3.5 | Ci. | S.-Cu. NE | ------ | ⊕° p. |
| 17 | 58.77 | 25.8 | 32.1 | 20.4 | 84.8 | W quad. | 8.2 | 2 | Ci., A.-Cu. | Cu., S.-Cu. | ------ | |
| 18 | 59.37 | 26.2 | 31.1 | 21.8 | 82.3 | Variable | 9.3 | 2.8 | A.-Cu. | S.-Cu. | ------ | |
| 19 | 61.19 | 26.3 | 33.3 | 22.2 | 72.5 | S | 12.9 | 5.2 | Ci., Ci.-S | S.-Cu. | ------ | |
| 20 | 62.59 | 25.3 | 32 | 21.5 | 74 | S quad. | 13.4 | 5.5 | A.-Cu. S | S.-Cu. E | ------ | |
| 21 | 61.88 | 24.9 | 32.5 | 18.8 | 80.3 | S quad. | 10.8 | 3.7 | Ci.-S. | S.-Cu. | ------ | |
| 22 | 60.79 | 25.4 | 31.4 | 19.5 | 79.8 | SE, NW | 13 | 2.7 | Ci. | Cu., S.-Cu. | ------ | |
| 23 | 61.22 | 24.8 | 29.4 | 19.6 | 86.2 | NW, NNW | 12.7 | 3.2 | ------------------ | S.-Cu. NNW | ------ | |
| 24 | 62.20 | 24.4 | 29.2 | 18.9 | 85.3 | NW | 11.3 | 2 | ------------------ | Cu., S.-Cu. | ------ | ≡° a. |
| 25 | 61.90 | 24.5 | 29.3 | 19.3 | 86 | NW | 13.8 | 4.3 | Ci., A.-Cu. | S.-Cu. NW | ------ | |
| 26 | 60.87 | 24.9 | 28 | 23.6 | 89.3 | NNW, NW | 20.4 | 10 | A.-Cu. | S.-Cu. Variable | .5 | d° p. |
| 27 | 60.24 | 24.1 | 28 | 22.2 | 91 | N, NW | 18 | 9 | A.-Cu. | S.-Cu., N. NNW, N | 1.8 | d a. |
| 28 | 60 | 24.7 | 28.8 | 21.3 | 87.2 | NW | 17.7 | 5.2 | ------------------ | S.-Cu. WSW | ------ | d° a. |
| Mean | 760.56 | 25.6 | 31.2 | 21.2 | 80.4 | ------------ | 12.2 | 5.1 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 7.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 7.5 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 757.23 | 26.4 | 33.4 | 21.9 | 87.2 | S, W | 2 | 5.7 | Ci.-S. | S.-Cu. | ------ | Ω$^2$ ∞ ≡° a. |
| 2 | 58.84 | 26 | 31.1 | 21 | 88.3 | N quad. | 2.3 | 4.5 | Ci.-S. | Cu. | ------ | Ω ∞° a. |
| 3 | 59.66 | 26.8 | 30.4 | 25.4 | 87.7 | NNE | 5 | 8.5 | Ci.-S. | cu., s.-cu. NE,NNE | ------ | ↙° p. |
| 4 | 60.77 | 26.6 | 29.3 | 25.1 | 87 | NNE | 4.5 | 7.3 | Ci.-S. | Cu. NNE | ------ | ↙° a. p. |
| 5 | 61.18 | 26 | 32.1 | 21 | 85 | Variable | 1.8 | 8.3 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 6 | 59.94 | 26 | 30.2 | 22.4 | 84.3 | N quad. | 2.2 | 9 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 7 | 59.68 | 26.4 | 31.9 | 22.6 | 75.2 | SE quad. | 2.3 | 9.5 | Ci.-S. | S.-Cu. | ------ | Ω° a. ϖ° p. |
| 8 | 59.58 | 26.5 | 32 | 23.7 | 78.2 | SE quad. | 2.7 | 9.7 | Ci.-S., A.-Cu. | S.-Cu. | ------ | Ω° a. |
| 9 | 59.92 | 26.1 | 32 | 22.3 | 77 | SE quad. | 2.8 | 8.7 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 10 | 61.68 | 24.8 | 30.5 | 20.6 | 81.8 | SE quad. | 2.8 | 8.3 | Ci.-S. | S.-Cu. | ------ | Ω a. ѱ° p. |
| 11 | 62.28 | 25.1 | 30.6 | 17.9 | 89.2 | N quad. | 2 | 9.8 | Ci.-S. | S.-Cu. | ------ | Ω$^2$≡°a. ●°d°ѱ° p. |
| 12 | 61.58 | 26.4 | 31 | 24.1 | 87.3 | SE quad. | 2 | 10 | ------------------ | S.-Cu. | ------ | d° a. |
| 13 | 61.04 | 26.8 | 33.9 | 22.5 | 74.2 | SE quad. | 2.8 | 8.8 | Ci.-S. | S.-Cu. | ------ | d° a. ϖ p. |
| 14 | 60.92 | 26.1 | 31.2 | 20.7 | 82.5 | Variable | 3 | 8.2 | Ci.-S. | S.-Cu., Cu. | ------ | Ω ≡° a. ϖ° p. |
| 15 | 59.88 | 26.5 | 30.6 | 21.5 | 85 | N quad. | 2.3 | 8.8 | Ci.-S. | Cu. NE | ------ | ϖ° ѱ° Ω a. ○° p. |
| 16 | 59.07 | 26 | 31.9 | 20.5 | 84.3 | NE quad. | 2.7 | 7.8 | Ci.-S. | S.-Cu. | ------ | Ω$^2$ ≡° a. |
| 17 | 58.83 | 26.3 | 30.9 | 21 | 89.7 | NNW, NNE | 2.8 | 4.5 | Ci.-S. | S.-Cu., Cu. | ------ | Ω ≡° a. |
| 18 | 59.49 | 26.9 | 29.8 | 24.4 | 87.8 | NNE | 4.3 | 7.8 | Ci.-S. | Cu. NE | ------ | ↙° p. |
| 19 | 61.13 | 24.9 | 30 | 19.9 | 82 | NNE, S | 3.2 | 4.3 | Ci.-S. | S.-Cu. | ------ | Ω$^2$ ≡° a. ↙° p. |
| 20 | 62.44 | 25.2 | 31.1 | 21.4 | 75.5 | SE quad. | 3.2 | 5.8 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 21 | 61.82 | 25 | 30.6 | 19.9 | 80.3 | SSE, N | 2.5 | 8.8 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 22 | 60.60 | 25.4 | 31.6 | 20.5 | 77 | SSE, NNE | 3.5 | 6 | Ci.-S. | S.-Cu., Cu. | ------ | Ω a. |
| 23 | 61.18 | 25.6 | 28.8 | 24 | 84.3 | NNE | 5.5 | 5.2 | Ci.-S. | Cu. NNE | ------ | ↙° a. p. |
| 24 | 62.46 | 25.4 | 28.5 | 23.6 | 84 | NNE | 5 | 5.2 | Ci.-S. | Fr.-Cu. NNE | ------ | ↙° p. |
| 25 | 62.14 | 25.1 | 28.6 | 23.5 | 88.7 | NNE, N | 5 | 7.3 | Ci.-S. | S.-Cu. NNE | ------ | ↙° p. |
| 26 | 61.06 | 24.1 | 25.1 | 23 | 92 | N | 5.7 | 10 | ------------------ | N.-cf. N | 1 | ↙° a. p. p a. d° p. |
| 27 | 60.35 | 23.8 | 27 | 22.4 | 92.2 | N | 4.5 | 9.8 | Ci.-S. | N.-cf., S.-Cu. N | 3.4 | p a. |
| 28 | 60.20 | 25 | 28.6 | 23.2 | 84.5 | NNE | 4.2 | 7.8 | Ci.-S. | S.-Cu. N | ------ | |
| Mean | 760.53 | 25.8 | 30.5 | 22.1 | 84 | ------------ | 3.3 | 7.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 4.4 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 635.45 | 18.9 | 25.4 | 14.6 | 78.8 | SE, W | 16 | 3 | Ci. | Fr.-N. W | ------ | Ω a. |
| 2 | 36.57 | 18.4 | 24.3 | 15 | 84.5 | E quad. | 11.9 | 5.3 | Ci. | Cu. | ------ | Ω$^2$ a. ≡° p. ∞ a. p. |
| 3 | 36.91 | 17.5 | 23.2 | 14.5 | 85.7 | Variable | 9.1 | 4.7 | Ci. | Cu. | ------ | Ω$^2$ a. ∞ a. p. |
| 4 | 37.84 | 16.8 | 22.3 | 13.6 | 87.8 | E quad. | 14.9 | 7.1 | Ci. | Cu., Cu.-N. | 19.4 | Ω$^2$ ∞ a. ≡ p ● p. |
| 5 | 38.24 | 16.4 | 20.8 | 14 | 88.3 | NE quad. | 11.1 | 8.7 | A.-Cu., Ci. | Variable | 1.1 | d ≡$^2$ p. |
| 6 | 37.12 | 16.2 | 21.2 | 13.4 | 83.8 | SE quad. | 14.7 | 9.3 | Ci.-Cu. | S.-Cu. SSE | ------ | |
| 7 | 37 | 16.4 | 21.9 | 12.7 | 79.5 | SE quad. | 16.3 | 9.3 | A.-Cu. WSW | S.-Cu. WNW, NE | ------ | |
| 8 | 36.69 | 15.4 | 22 | 13.2 | 80.7 | E | 12.6 | 9.9 | A.-Cu. WNW | S.-Cu. NE | ------ | ≡ p. |
| 9 | 37.01 | 16.2 | 22.9 | 11.6 | 70.3 | E | 15.2 | 5 | Ci. | Cu. | ------ | ≡ p. |
| 10 | 38.39 | 16.1 | 23.2 | 12 | 81.3 | E | 23.3 | 4.9 | Ci. | Cu. ESE | ------ | ∞° a. ≡° p. |
| 11 | 39.20 | 17.2 | 23.1 | 13 | 78 | E quad. | 15.8 | 7.9 | Ci. | S.-Cu. E | .5 | Ω a. d p p. |
| 12 | 38.77 | 16.7 | 21.8 | 13.8 | 79.3 | E | 17.5 | 10 | A.-Cu. | S.-Cu. NE | .3 | p° p. |
| 13 | 38.08 | 15.8 | 23 | 12.1 | 80.2 | E, W | 15 | 10 | A.-Cu. E | S.-Cu. NE | ------ | ≡° p. |
| 14 | 37.78 | 16.7 | 23.3 | 11.6 | 77.8 | W quad. | 14.3 | 4.9 | Ci. | S.-Cu. WNW | .3 | ≡$^2$ p p. |
| 15 | 37.02 | 17 | 22.3 | 13.5 | 82.8 | E, WSW | 11 | 8 | Ci. S | Cu. | ------ | Ω a. ≡ p. |
| 16 | 36.54 | 16.9 | 22.6 | 13.3 | 85.3 | E | 14.6 | 9.1 | Ci. | S.-Cu. NE | ------ | ≡ p. |
| 17 | 36.58 | 17.1 | 21.9 | 14 | 90.8 | E, WSW | 12.8 | 7.1 | Ci. | S.-Cu. NE | .8 | Ω° a. ≡ ●° p. |
| 18 | 37.04 | 17.4 | 22.7 | 13.1 | 85.5 | E quad. | 13.8 | 6.7 | Ci., A.-Cu. | Cu., Cu.-N. E, NE | ------ | Ω a. ≡ p. |
| 19 | 38.08 | 15.8 | 23 | 12.4 | 82.8 | E | 18.9 | 5.3 | Ci.-Cu. SE | Cu., S.-Cu. | ------ | |
| 20 | 38.78 | 15.4 | 23.2 | 11 | 77 | E | 18.9 | 8.4 | A.-Cu. SW | S.-Cu., Cu. | ------ | |
| 21 | 38.40 | 16.1 | 22.1 | 12 | 89.5 | E, W | 14.7 | 6.6 | Ci. | S.-Cu. | ------ | |
| 22 | 37.34 | 16 | 22.8 | 12.1 | 85.3 | W | 12.1 | 6.1 | Ci.-Cu. SbyW | Fr.-Cu SbyW | ------ | Ω$^2$ a. ≡° p. |
| 23 | 37.48 | 15.8 | 22.4 | 12 | 73.3 | W | 14.3 | 4.9 | Ci. | S.-Cu. E | ------ | Ω a. ≡ p. |
| 24 | 38.55 | 16.2 | 22.1 | 12.2 | 72 | E, W | 16.1 | 4.6 | Ci. | Cu. | ------ | Ω a. ≡$^2$ p. |
| 25 | 38.35 | 16.7 | 22.4 | 12.5 | 79.5 | NE quad. | 9.7 | 6.1 | Ci. | Cu. | ------ | Ω a. ≡$^2$ p. |
| 26 | 37.08 | 15.1 | 17.5 | 13.7 | 93.8 | Variable | 6.3 | 10 | ------------------ | S.-Cu. SE | 15.3 | ≡ ●° a. ● ≡$^2$ p. |
| 27 | 36.45 | 15 | 17.3 | 13.9 | 98.5 | E, W | 7.3 | 10 | ------------------ | S.-Cu. | ------ | ≡$^2$ d° a. p. |
| 28 | 36.52 | 15.6 | 20.5 | 12.5 | 91.2 | E, W | 9.6 | 5.7 | A.-Cu. | Cu., Cu.-N. | ------ | Ω$^2$ a. ≡$^2$ p. |
| Mean | 637.47 | 16.5 | 22.2 | 13 | 83 | ------------ | 13.8 | 7.1 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | 387.8 | ---------- | ------------------ | ------------------ | 7.7 | |

[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.46 | 26.3 | 31.2 | 20.1 | 75.5 | SE quad. | 6 | 1.3 | Ci.-S. | Cu. SE, ESE | ------ | ≡° a. |
| 2 | 59.13 | 26 | 32.2 | 22.9 | 78.8 | NbyE | 7.6 | 2.5 | Ci.-S. | Cu. SSE | ------ | ≡° a. |
| 3 | 59.77 | 24.8 | 29.4 | 19.7 | 74.8 | N | 18.7 | 1.7 | Ci.-S. | Fr.-Cu. NW | ------ | ≡° a. ⊕° a. p. ↙° p. |
| 4 | 61.11 | 24.7 | 29.5 | 20.3 | 71.7 | N quad. | 15 | 1.7 | Ci.-S. | Cu. | ------ | ≡° a. |
| 5 | 61.45 | 25.1 | 31.2 | 19.7 | 71.3 | N quad. | 5.1 | 3 | Ci.-S. | S.-Cu. | ------ | ≡ a. ⌽ p. |
| 6 | 60.01 | 26.9 | 32.6 | 22.2 | 59.3 | N quad. | 12.6 | 6 | A.-Cu. SE | S.-Cu. SSE | ------ | ≡° a. ⌽ p. |
| 7 | 59.99 | 27.1 | 31.7 | 23.8 | 61 | Variable | 9.2 | 6.8 | A.-Cu. SW | S.-Cu. WSW | ------ | ≡° a. |
| 8 | 59.73 | 26.8 | 31.9 | 22.3 | 63.7 | E quad. | 8.7 | 6.5 | A.-Cu. SW | S.-Cu., Cu. | ------ | ≡° a. |
| 9 | 60.02 | 27.9 | 32.2 | 24.7 | 55.3 | NE | 15.7 | 2 | Ci. | Cu. | ------ | |
| 10 | 61.88 | 27.6 | 33.9 | 24.3 | 59.3 | NE quad. | 18.6 | 1.7 | Ci. NNE | S.-Cu. | ------ | |
| 11 | 62.42 | 27.1 | 31.7 | 23.2 | 68.7 | N quad. | 18.1 | 6.7 | Ci.-S. SE | S.-Cu. | ------ | ⌒$^2$ d° p. |
| 12 | 61.60 | 28.6 | 33.4 | 26.7 | 64.3 | NE | 15.5 | 9.7 | A.-Cu. SSE | S.-Cu. SE | 0.4 | |
| 13 | 61.30 | 27.2 | 32 | 23.8 | 68.3 | NE quad. | 9.9 | 8.2 | A.-Cu. SE | S.-Cu. SW | ------ | d a. ⌽ p. |
| 14 | 61.20 | 26.3 | 31.4 | 22.1 | 76 | Variable | 9 | 2.5 | A.-Cu. SE | S.-Cu. SW | ------ | |
| 15 | 59.99 | 25.3 | 31.2 | 20.4 | 83.3 | N | 10.8 | 2.2 | Ci.-S. SE | S.-Cu. SW | ------ | ≡° ◯ a. |
| 16 | 59.22 | 27.4 | 32.1 | 23 | 76.7 | N quad. | 16 | 2.3 | Ci.-S. SSW | S.-Cu. SW | ------ | ≡° a. |
| 17 | 59.18 | 25.7 | 30.7 | 21.2 | 86.8 | NNE | 15.8 | 4.3 | A.-Cu. SSW | S.-Cu. | ------ | ≡° a. |
| 18 | 60.25 | 25.8 | 30.2 | 22.4 | 76.5 | N quad. | 22.1 | 8.5 | A.-Cu. S | S.-Cu. SE | ------ | ≡° a. |
| 19 | 61.95 | 26.9 | 32.1 | 23.1 | 67.5 | NE | 21.4 | 2.8 | A.-Cu. S | S.-Cu. | ------ | |
| 20 | 62.83 | 26.4 | 32.3 | 21.8 | 69 | ENE | 19.6 | 2.7 | Ci.-S. | S.-Cu. ESE | ------ | ↙° ◯ a. |
| 21 | 61.84 | 26.5 | 32.4 | 20.5 | 71.2 | N quad. | 15.5 | 2.8 | A.-Cu. SE, ESE | S.-Cu. ESE | ------ | |
| 22 | 60.92 | 25.3 | 30.8 | 20.4 | 73.8 | N quad. | 11.3 | 1.2 | Ci. | S.-Cu. ESE | ------ | ≡° a. |
| 23 | 61.33 | 23.1 | 29.2 | 18 | 83.5 | N quad. | 20.2 | ---------- | Ci.-S. | S.-Cu. | ------ | ≡ a. ↙° p. |
| 24 | 62.69 | 23.4 | 29 | 19 | 76.2 | N | 23.7 | ---------- | Ci.-S. | S.-Cu., Cu. | ------ | ↙° p. |
| 25 | 62.29 | 23.4 | 29 | 18.6 | 71 | N | 21.7 | 1.5 | Ci.-S. | S.-Cu. | ------ | ≡° a. ↙° d° p. |
| 26 | 61 | 23.4 | 26.5 | 20 | 74 | N quad. | 27.4 | 7.2 | A.-Cu. SW | S.-Cu. | ------ | ≡° a. ↙° p. |
| 27 | 60.33 | 22.9 | 27.1 | 19.8 | 78.2 | N quad. | --------- | 3.2 | Ci.-S. | Cu. N | 1.3 | ≡° a. ↙° p. |
| 28 | 60.41 | 23.3 | 28.7 | 19.6 | 82 | N quad. | --------- | 3.3 | Ci.-S. | Cu. NbyE | ------ | ●° a. |
| Mean | 760.76 | 25.8 | 30.9 | 21.6 | 72.1 | ------------ | 15.2 | 3.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 1.7 | |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 757.30 | 26.8 | 34.5 | 20.5 | 75.7 | S quad. | 1 | 5.7 | ------------------ | Cu. S | ------ | Ω$^2$ ≡ a. |
| 2 | 59.04 | 26.6 | 33 | 23.3 | 80.3 | NW | .5 | 7.7 | ------------------ | S.-Cu. | ------ | |
| 3 | 60.36 | 25.2 | 31.4 | 21.8 | 79.5 | NW | 1.7 | 8.2 | ------------------ | Cu. NE, NW | ------ | ∞ p. |
| 4 | 62.73 | 23.2 | 27.2 | 20.6 | 81.5 | NW | 3.2 | 7.2 | A.-Cu. | S.-Cu. N | ------ | |
| 5 | 63.36 | 23.2 | 26.9 | 20.6 | 83.3 | NW | 1.5 | 9.2 | ------------------ | S.-Cu. N | ------ | d a. p. |
| 6 | 62.69 | 22.6 | 26.7 | 19.6 | 78.5 | NW | 2.5 | 10 | ------------------ | S.-Cu. N | ------ | |
| 7 | 62.78 | 22.4 | 25.5 | 20 | 85.7 | NW | .2 | 9.3 | ------------------ | S.-Cu. NE | ------ | Ω a. |
| 8 | 62.01 | 23.2 | 28.7 | 20 | 84.3 | S | .2 | 8.3 | ------------------ | S.-Cu. SE | ------ | Ω a. |
| 9 | 62.88 | 22.6 | 29.6 | 18.1 | 80.8 | NW, NNW | .3 | 6.2 | ------------------ | Cu. SE | ------ | Ω a. |
| 10 | 64.50 | 22.4 | 30.2 | 17.4 | 77.3 | NW | .5 | 6.2 | Ci.-S., A.-Cu. | S.-Cu. | 9.7 | Ω$^2$ a. |
| 11 | 64.55 | 22.8 | 27.9 | 20.2 | 91.2 | NW | .5 | 8.8 | ------------------ | Cu.-N., N. | 21.5 | ● a. p. |
| 12 | 64.34 | 23 | 28.1 | 20.3 | 86.7 | N, NW | .5 | 8.7 | Ci. | Cu.-N. N | 5.8 | d ● a. |
| 13 | 63.74 | 23.5 | 30 | 19.6 | 77.3 | NW | .2 | 6.2 | Ci., A.-Cu. | Cu.-N. | ------ | Ω d a. |
| 14 | 62.53 | 23.2 | 29.4 | 19.6 | 85 | NW | .5 | 8.2 | Ci., Ci.-S. | Cu.-N. S, W | ------ | Ω$^2$ d a. ⌽ ⌣$^2$ p. |
| 15 | 61.65 | 23.6 | 29.4 | 19.6 | 78.7 | NW quad. | 1 | 6.5 | Ci. | Cu. N | ------ | Ω a. |
| 16 | 61.60 | 22.9 | 27 | 20.1 | 81.7 | NW | 2.5 | 7.2 | Ci.-S. | Cu.-N. N | ------ | Ω d a. |
| 17 | 60.94 | 22.4 | 24 | 20.7 | 90.5 | NW | 2.8 | 9 | ------------------ | Cu.-N. N | 15.7 | ● a. p. d p. |
| 18 | 62.55 | 22 | 25 | 20.4 | 87.5 | NW | 3.2 | 9.2 | ------------------ | N., Cu.-N. N | ------ | d a. |
| 19 | 65.10 | 21.5 | 25.7 | 19.6 | 76.8 | NW, N | 3 | 8.8 | Ci. SW | Cu.-N. N | ------ | d p. |
| 20 | 65.84 | 21.3 | 24.3 | 17.8 | 80.5 | NW, N | 1.3 | 7.2 | ------------------ | Cu.-N. N | ------ | |
| 21 | 64.67 | 22.3 | 26.5 | 19.3 | 76.8 | N | 1.2 | 7.5 | ------------------ | Variable N | ------ | Ω a. |
| 22 | 62.48 | 22 | 31 | 15.5 | 77 | N | .2 | 4.5 | Ci. | Cu. S | ------ | Ω a. |
| 23 | 62.88 | 22.2 | 28.2 | 17.5 | 79.5 | N, NW | 1.2 | 6 | ------------------ | Cu. NW, N | ------ | Ω$^2$ a. |
| 24 | 64.75 | 21.8 | 27.3 | 19.1 | 83.7 | N, NW | 2.2 | 5.7 | Ci., A.-Cu. | Cu., Cu.-N. N, NW | ------ | d p. |
| 25 | 63.60 | 22.9 | 28.3 | 19.4 | 81.8 | NW | 2.5 | 6.7 | Variable | Cu. E, N | ------ | |
| 26 | 61.76 | 22.8 | 27 | 20.5 | 85 | NW | 1.2 | 8.8 | ------------------ | Cu.-N. NE | ------ | d a. |
| 27 | 60.44 | 23.5 | 29.4 | 19.1 | 81.5 | N quad. | .5 | 6.5 | A.-Cu. | Cu. N | ------ | Ω$^2$ a. |
| 28 | 59.93 | 24 | 32.2 | 18.8 | 78.9 | N quad. | .7 | 6.2 | A.-Cu. W | Cu. E | ------ | Ω$^2$ ≡° a. |
| Mean | 762.54 | 23.1 | 28.4 | 19.6 | 81.7 | ------------ | 1.3 | 7.5 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 52.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Perct.* | | *Km.p.h.* | *0-10.* | | | *mm.* | |
| 1 | 757.59 | 25.8 | 31.1 | 22.2 | 83.3 | E quad. | 9.4 | 0.7 | ------ | S.-Cu. | ------ | Ω a. ∞ a. p. |
| 2 | 59.49 | 25.5 | 29.7 | 22.4 | 84.7 | NE | 8.8 | 2.3 | ------ | S.-Cu. N | 3.3 | Ω a. ∞ a. p. |
| 3 | 61.17 | 23.4 | 28.4 | 21.5 | 86.8 | N, NE | 15.3 | 8.3 | ------ | S.-Cu., N. N, NE | 72.3 | ● p. |
| 4 | 63.71 | 22.2 | 23.5 | 20.7 | 84.8 | NE, E | 23 | 10 | ------ | N. NE | 21.7 | ● a. p. |
| 5 | 63.91 | 23.2 | 24.5 | 21.1 | 78.3 | E | 24.6 | 10 | ------ | S.-Cu., N. E | 4.7 | ● a. p. |
| 6 | 63.51 | 22.9 | 25 | 20.5 | 70.7 | E | 24.5 | 10 | ------ | S.-Cu. E | ------ | ● ° a. |
| 7 | 63.12 | 21.7 | 24.9 | 19.5 | 84.7 | SE | 7.7 | 10 | A.-Cu. | S.-Cu. SE | ------ | |
| 8 | 62.23 | 22.9 | 27.3 | 20.3 | 74 | S, E | 11.3 | 8 | A.-Cu. | S.-Cu. E | 10.7 | |
| 9 | 63.60 | 23 | 26 | 19.5 | 78.5 | E | 22.4 | 4.5 | ------ | Cu.-N. E | ------ | ● a. |
| 10 | 65.24 | 23.8 | 26.6 | 21.2 | 70.3 | E | 21 | 5.3 | A.-Cu. S | S.-Cu., Cu-N. E | 16.5 | |
| 11 | 65.23 | 23.6 | 24.8 | 21.2 | 88.5 | E quad. | 24.5 | 10 | ------ | S.-Cu., N. NE | 13.5 | ● a. p. |
| 12 | 65.12 | 24.1 | 26.7 | 22.4 | 74.7 | E | 23 | 8 | A.-Cu. SE | S.-Cu. E | ------ | |
| 13 | 64.14 | 23.8 | 26.3 | 21.2 | 68.3 | E | 17.7 | 6.5 | A.-Cu. SW, NW | S.-Cu., Cu.-N. | ------ | |
| 14 | 62.98 | 23.3 | 26.9 | 19.8 | 78.8 | SE quad. | 10.3 | 7.5 | A.-Cu. SE | S.-Cu. SE | ------ | |
| 15 | 62.53 | 23.7 | 26.9 | 21.2 | 76.7 | E, NE | 17.6 | 5.8 | A.-Cu., Ci. E, S | S.-Cu., Cu.-N. E, NE | ------ | |
| 16 | 62.52 | 23.3 | 26 | 21.1 | 79.3 | NE | 27.6 | 9.5 | ------ | Cu.-N. NE | 1.8 | ● p. |
| 17 | 62.07 | 22.4 | 24.5 | 21 | 84.5 | NE | 32.7 | 10 | ------ | Fr.-N., N. NE | 5.5 | ● a. p. |
| 18 | 63.74 | 22.4 | 23.5 | 20.3 | 77.7 | NE | 31 | 10 | ------ | Cu.-N., S.-Cu. NE | .3 | ● a. d p. |
| 19 | 66.28 | 22.4 | 25.4 | 20.2 | 67.7 | NE | ------ | 9.2 | ------ | Cu.-N., S.-Cu. ENE | 1.3 | |
| 20 | 66.63 | 21.4 | 23 | 19.1 | 77.3 | NE quad. | 24.7 | 10 | ------ | S.-Cu., N. ENE | 9.1 | ● a. p. |
| 21 | 65.37 | 22.4 | 25.7 | 19.5 | 73.7 | E | 18 | 6.3 | A.-Cu. SW | S.-Cu. E | ------ | |
| 22 | 62.91 | 21.6 | 26.5 | 16.6 | 73.2 | E, NE | 10.2 | .2 | ------ | Cu. | ------ | Ω ≡ a. |
| 23 | 63.60 | 22.3 | 27.2 | 19 | 77.5 | N, NE | 14.8 | 5.5 | A.-Cu. NW | Cu.-N. NW | 8.2 | ● a. p. |
| 24 | 65.72 | 22.1 | 25.6 | 19.7 | 75.3 | NE | 27.7 | 9.2 | ------ | Cu.-N., S.-Cu. NE | 1.6 | ● a. p. |
| 25 | 64.54 | 23 | 26 | 20.4 | 78 | NE | 23.8 | 9.7 | ------ | Cu.-N., S.-Cu. NE | 7.8 | ● ⌒ a. |
| 26 | 62.33 | 21.8 | 26 | 20.1 | 84.8 | NE | 13.3 | 10 | ------ | S.-Cu., N. NE | 11.9 | ● a. |
| 27 | 61.03 | 22.3 | 26.2 | 19.6 | 87.3 | NE, N | 9 | 6.8 | A.-Cu. S | S.-Cu. NE | ------ | ● a. |
| 28 | 60.67 | 22.8 | 27.6 | 19.5 | 83.2 | N | 10.5 | 5.7 | A.-Cu. SW | Fr.-N. N | 1.4 | Ω a. ● p. |
| Mean | 763.25 | 23 | 26.1 | 20.4 | 78.7 | ------ | 18.7 | 7.5 | ------ | ------ | ------ | ------ |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 191.6 | ------ |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.5 | 21.6 | 95 | 66 | 10 | 9 | ------ | ⌓ a. |
| 2 | 31.6 | 21.2 | 89 | 72 | 9 | 9 | ------ | ⌓ a. |
| 3 | 33.3 | 20.2 | 91 | 64 | 1 | 7 | ------ | ⌓ a. |
| 4 | 33.8 | 21 | 96 | 59 | 1 | 4 | ------ | ⌓ a. |
| 5 | 33.1 | 21.5 | 91 | 63 | 1 | 9 | ------ | ⌓ a. |
| 6 | 33.3 | 22.5 | 83 | 71 | 10 | 10 | 2 | p° p. |
| 7 | 29.6 | 23 | 91 | 92 | 10 | 10 | 47.2 | d p a. ● p. |
| 8 | 30.6 | 21.8 | 93 | 74 | 10 | 10 | 2.3 | d ●° a. |
| 9 | 31.8 | 22 | 96 | 70 | 10 | 9 | ------ | ⌓ a. |
| 10 | 31.9 | 21.2 | 94 | 72 | 10 | 10 | ------ | ⌓ a. ⋓ p. |
| 11 | 31.5 | 22 | 92 | 70 | 9 | 10 | ------ | ⌓ a. ⋓ p. |
| 12 | 32.7 | 21.2 | 97 | 62 | 10 | 6 | ------ | ⌓ a. |
| 13 | 31.5 | 22.2 | 96 | 81 | 10 | 9 | 20.6 | ⌓ a. ⍈ ● p. |
| 14 | 30.2 | 22 | 96 | 69 | 10 | 5 | ------ | ⌓ a. |
| 15 | 28.9 | 23 | 96 | 74 | 10 | 10 | 7.4 | ⌒ a. p° p. |
| 16 | 28.9 | 23.8 | 96 | 79 | 10 | 6 | 10.9 | ● ⌒ a. |
| 17 | 28.1 | 24 | 89 | 88 | 10 | 10 | 5.6 | ● ⌒ a. d p. |
| 18 | 28.7 | 23.5 | 97 | 89 | 10 | 10 | 1.3 | ●° a. d a. p. |
| 19 | 28.1 | 23 | 93 | 81 | 10 | 10 | ------ | p. a. |
| 20 | 30.1 | 22 | 96 | 83 | 10 | 10 | ------ | ⌓ a. ↯ p. |
| 21 | 29.5 | 22.5 | 97 | 76 | 10 | 10 | 54.9 | ⊤ ↯ ● p. |
| 22 | 28.5 | 22.5 | 96 | 81 | 10 | 9 | ------ | d a. |
| 23 | 28.8 | 23 | 89 | 75 | 6 | 4 | ------ | ⌓° a. |
| 24 | 30.1 | 22.2 | 94 | 74 | 2 | 6 | ------ | ⌓ a. |
| 25 | 29.8 | 20.2 | 97 | 73 | 1 | 3 | ------ | ⌓ a. |
| 26 | 29.8 | 20.5 | 96 | 74 | 10 | 4 | ------ | ⌓ a. |
| 27 | 29.3 | 22 | 95 | 76 | 3 | 4 | ------ | ⌓ a. |
| 28 | 28.8? | 22.2 | 96 | 73 | 0 | 4 | ------ | ⌓ a. |
| Mean | 30.5 | 22.1 | 93.8 | 74.3 | 7.6 | 7.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 152.2 | |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.1 | 23 | 96 | 75 | 8 | 9 | ------ | ● d a. |
| 2 | 30.7 | 21.5 | 82 | 64 | 3 | 8 | ------ | ⌓° a. |
| 3 | 32.5 | 21.3 | 82 | 52 | 3 | 8 | ------ | |
| 4 | 32.5 | 21.4 | 87 | 70 | 8 | 7 | ------ | |
| 5 | 31.9 | 22.9 | 81 | 64 | 3 | 8 | ------ | |
| 6 | 31.5 | 24.4 | 72 | 61 | 10 | 10 | 0.3 | |
| 7 | 30.6 | 22.6 | 93 | 63 | 10 | 10 | 35.8 | ● a. |
| 8 | 28.5 | 21 | 86 | 70 | 10 | 10 | 1.3 | ● d a. |
| 9 | 32 | 22.4 | 84 | 70 | 10 | 8 | ------ | |
| 10 | 31.8 | 22 | 89 | 66 | 9 | 10 | ------ | |
| 11 | 30.5 | 22.8 | 85 | 66 | 8 | 10 | ------ | |
| 12 | 31.6 | 22.4 | 89 | 62 | 10 | 9 | ------ | |
| 13 | 28.5 | 23.4 | 85 | 78 | 10 | 10 | 15.7 | d ● p. |
| 14 | 30.8 | 20.5 | 82 | 68 | 8 | 3 | ------ | |
| 15 | 29.9 | 20.6 | 89 | 79 | 3 | 10 | 2 | ⌓ a. p p. |
| 16 | 30.5 | 23.4 | 95 | 72 | 10 | 9 | 2.5 | p a. |
| 17 | 28.6 | 23.5 | 94 | 100 | 10 | 10 | 13.7 | ≡ a. ● a. p. |
| 18 | 29.4 | 24 | 88 | 74 | 10 | 10 | ------ | ⍈ p. |
| 19 | 28.1 | 23.5 | 93 | 92 | 9 | 10 | 26.4 | ⍈ a. ● p. |
| 20 | 28.5 | 22.6 | 92 | 79 | 9 | 10 | 50.8 | ●² p. |
| 21 | 29.8 | 22.5 | 96 | 72 | 10 | 9 | 34.5 | ● p. |
| 22 | 31 | 22.4 | 98 | 79 | 10 | 9 | ------ | ● a. |
| 23 | 31.4 | 21.6 | 91 | 63 | 4 | 4 | ------ | ⌓ a. |
| 24 | 31.2 | 21 | 87 | 70 | 3 | 2 | ------ | ⌓° a. |
| 25 | 30.6 | 21 | 87 | 77 | 2 | 2 | ------ | ⌓° a. |
| 26 | 30.9 | 20.5 | 89 | 61 | 3 | 2 | ------ | ⌓° a. |
| 27 | 30.4 | 20.5 | 84 | 69 | 3 | 2 | ------ | |
| 28 | 30 | 21.2 | 89 | 75 | 2 | 1 | ------ | ⌓° a. |
| Mean | 30.5 | 22.1 | 88 | 71.1 | 7.1 | 7.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 183 | |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6. a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 33.4 | 20.6 | 96 | 59 | 6 | 5 | ------ | |
| 2 | 32.8 | 20.2 | 95 | 65 | 6 | 6 | ------ | |
| 3 | 34.2 | 21.1 | 96 | 58 | 5 | 7 | ------ | |
| 4 | 34.5 | 20.6 | 94 | 63 | 5 | 6 | ------ | |
| 5 | 30.2 | 20.8 | 84 | 71 | 6 | 9 | 26.7 | ●² p. |
| 6 | 25.5 | 20.4 | 94 | 95 | 5 | 8 | ------ | ●² a. |
| 7 | 24.5 | 22.1 | 94 | 91 | 8 | 9 | 23.6 | ● p. |
| 8 | 28.9 | 20 | 93 | 69 | 8 | 8 | ------ | ⊤ ⍈ p. |
| 9 | 31.7 | 20.1 | 94 | 69 | 6 | 5 | ------ | |
| 10 | 34.2 | 19.8 | 91 | 68 | 7 | 6 | ------ | |
| 11 | 32.1 | 20.1 | 95 | 67 | 5 | 6 | ------ | |
| 12 | 31.7 | 19.4 | 96 | 77 | 5 | 9 | ------ | d° p. |
| 13 | 32 | 21 | 96 | 71 | 7 | 6 | ------ | |
| 14 | 31 | 20.7 | 91 | 59 | 5 | 6 | ------ | |
| 15 | 31.1 | 21 | 96 | 66 | 5 | 6 | ------ | |
| 16 | 32.3 | 23 | 96 | 65 | 7 | 5 | ------ | ↯ ⊤ p. |
| 17 | 33.2 | 22.7 | 94 | 66 | 6 | 6 | ------ | ⍈ p. |
| 18 | 31.7 | 23.1 | 97 | 76 | 5 | 7 | 13.7 | ● p. |
| 19 | 32.3 | 22.2 | 97 | 69 | 6 | 5 | ------ | |
| 20 | 33.1 | 23 | 97 | 64 | 6 | 7 | ------ | ⍈ p. |
| 21 | 31.2 | 23.1 | 97 | 76 | 6 | 8 | 24.6 | ● p. |
| 22 | 30.7 | 22.3 | 98 | 76 | 5 | 8 | 21.8 | ● a. p. |
| 23 | 31.2 | 22.1 | 97 | 73 | 6 | 5 | 18.3 | ● p. |
| 24 | 32.2 | 21.9 | 96 | 66 | 5 | 6 | ------ | |
| 25 | 31.3 | 21.1 | 95 | 71 | 5 | 6 | ------ | |
| 26 | 31.9 | 21.1 | 96 | 60 | 5 | 5 | ------ | |
| 27 | 31.5 | 22.6 | 96 | 69 | 7 | 6 | ------ | |
| 28 | 32.1 | 23 | 97 | 67 | 5 | 6 | 18.3 | ● ⊤ p. |
| Mean | 31.5 | 21.4 | 94.9 | 69.5 | 5.8 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 147 | |

### COTABATO.

[$\phi$=7° 13′ N; $\lambda$=124° 15′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.7 | 22.4 | 93 | 61 | 1 | 3 | ------ | ⌓ a. ↯ p. |
| 2 | 32.8 | 21.9 | 89 | 61 | 2 | 8 | ------ | ⌓° a. ∞° ↯ p. |
| 3 | 32.1 | 21.8 | 88 | 60 | 3 | 4 | ------ | ⌓° a. ↯ p. |
| 4 | 33 | 21.3 | 92 | 54 | 4 | 8 | ------ | ⌓² a. ◯° ↯° p. |
| 5 | 32.6 | 21 | 84 | 54 | 2 | 10 | ------ | ⌓° a. ◯ p. |
| 6 | 27 | 22.5 | 89 | 79 | 10 | 10 | 1.5 | d ◌ a. p. |
| 7 | 26.9 | 23.2 | 92 | 80 | 10 | 10 | .5 | d° a. p. |
| 8 | 31.2 | 22.6 | 78 | 59 | 10 | 10 | ------ | ⌓° a. ↯° p. |
| 9 | 32.5 | 20.9 | 87 | 53 | 4 | 4 | 2.8 | ⌓² a. ↯ ● p. |
| 10 | 32.7 | 21.4 | 92 | 59 | 2 | 4 | 1.5 | ⌓ a. d° ⌒ ●° p. |
| 11 | 30.9 | 21.1 | 95 | 72 | 10 | 8 | ------ | ⌓² a. ↯° p. |
| 12 | 33.3 | 21.9 | 88 | 54 | 3 | 8 | 13 | ⌓° a. ◌° ● ⍈ p. |
| 13 | 30.9 | 22.6 | 94 | 68 | 8 | 6 | ------ | ⌓² a. |
| 14 | 31 | 21.2 | 97 | 61 | 8 | 2 | ------ | ⌓² ≡ a. ↯ ⊖ p. |
| 15 | 32.7 | 20.9 | 93 | 63 | 6 | 8 | ------ | ⌓° a. ↯ p. |
| 16 | 31.5 | 24 | 94 | 68 | 5 | 8 | ------ | ⌓² a. ⌒ ⍈ p. |
| 17 | 33 | 23.7 | 95 | 67 | 10 | 6 | .3 | ⌓² a. ⍈° d² p. |
| 18 | 31.8 | 22.5 | 97 | 72 | 8 | 10 | ------ | ⌓² a. ↯ ◯ p. |
| 19 | 33 | 23.5 | 94 | 65 | 10 | 6 | .5 | ⌓ a. ⍈ ↯ d² p. |
| 20 | 29.9 | 22.9 | 95 | 73 | 10 | 8 | ------ | ⌓² a. ◌² ↯ p. |
| 21 | 31.8 | 22.7 | 95 | 67 | 4 | 5 | .3 | ⌓² a. d ↯ p. |
| 22 | 29.4 | 23.7 | 95 | 71 | 10 | 8 | .3 | d² ↯ p. |
| 23 | 31.7 | 23.3 | 94 | 62 | 4 | 3 | ------ | ⌓²≡° a ↙° ↯ p. |
| 24 | 33.1 | 22.2 | 94 | 55 | 2 | 3 | ------ | ⌓² a. ↯ p. |
| 25 | 33.2 | 21.8 | 95 | 60 | 1 | 2 | ------ | ⌓² ≡° a. |
| 26 | 32.5 | 23 | 93 | 52 | 8 | 2 | ------ | ⌓² ≡° a. ↯ p. |
| 27 | 33.1 | 22.3 | 91 | 62 | 3 | 2 | ------ | ⌓² a. |
| 28 | 33.4 | 22 | 93 | 62 | 6 | 2 | ------ | ⌓ a. |
| Mean | 31.8 | 22.3 | 92 | 63.4 | 5.9 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 20.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAPITAN.

[$\phi$=8° 40′ N; $\lambda$=123° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.2 | 23.4 | 87 | 69 | 8 | 6 | ------ | |
| 2 | 30 | 23.2 | 89 | 70 | 9 | 4 | ------ | d a. |
| 3 | 29.7 | 23.4 | 90 | 76 | 8 | 5 | ------ | Ω a. |
| 4 | 30.1 | 23.5 | 92 | 70 | 8 | 6 | ------ | Ω a. |
| 5 | 29 | 23.1 | 87 | 77 | 7 | 10 | 3.3 | ● p. |
| 6 | 28.6 | 22.4 | 90 | 79 | 10 | 10 | ? | ● a. p. d p. |
| 7 | 26.4 | 22.2 | 90 | 85 | 10 | 10 | 2.6 | ● a. ●° p. |
| 8 | 26.9 | 22.1 | 89 | 85 | 10 | 8 | ------ | ψ p. |
| 9 | 27.8 | 21.9 | 93 | 87 | 9 | 8 | .5 | Ω a. |
| 10 | 29.3 | 22 | 90 | 75 | 9 | 6 | 2 | ● a. |
| 11 | 30 | 22.3 | 90 | 74 | 9 | 8 | 1 | ● a. ○ ψ ●° p. |
| 12 | 30.3 | 22.1 | 90 | 72 | 10 | 8 | 2.1 | ● a. p. |
| 13 | 27.2 | 22 | 90 | 82 | 9 | 10 | ------ | d ϖ p. |
| 14 | 30.1 | 22 | 89 | 70 | 8 | 6 | .5 | Ω a. ϖ p. |
| 15 | 30 | 21.9 | 92 | 73 | 9 | 8 | ------ | ● a. |
| 16 | 29.6 | 22.5 | 90 | 79 | 10 | 8 | 2.3 | d a. ☇ p |
| 17 | 29.9 | 22.3 | 90 | 76 | 10 | 8 | .3 | ● a. ○ ●° ☇ p. |
| 18 | 29.9 | 22.6 | 91 | 76 | 7 | 10 | ------ | Ω ⌒°a. ◯ d ☇ p. |
| 19 | 29.8 | 22.4 | 92 | 75 | 9 | 10 | .5 | Ω a. ⌈☇ ● p. |
| 20 | 29.5 | 22.1 | 91 | 78 | 10 | 10 | 11.7 | ●° a. ◯ ☇ p. |
| 21 | 26.9 | 21.9 | 87 | 84 | 10 | 10 | 11.7 | ● a. p. |
| 22 | 26.7 | 22 | 94 | 83 | 10 | 10 | ------ | ● a. ◯ ☇ p. |
| 23 | 30.2 | 21.6 | 93 | 72 | 10 | 4 | ------ | Ω a. |
| 24 | 30.5 | 22.1 | 92 | 71 | 7 | 6 | ------ | Ω a. |
| 25 | 31.1 | 22 | 94 | 69 | 6 | 5 | ------ | Ω a. |
| 26 | 31.5 | 21.9 | 90 | 70 | 7 | 4 | ------ | Ω a. |
| 27 | 31.7 | 22.2 | 90 | 69 | 7 | 5 | ------ | Ω a. |
| 28 | 32.1 | 22.3 | 88 | 68 | 7 | 4 | ------ | Ω a. |
| Mean | 29.5 | 22.3 | 90.4 | 75.5 | 8.7 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 38.5? | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.1 | 21.3 | 96 | 65 | 4 | 4 | ------ | Ω² ≡° a. |
| 2 | 28.2 | 19.9 | 95 | 58 | 2 | 2 | ------ | Ω² a. |
| 3 | 28.7 | 20.6 | 96 | 65 | 6 | 6 | ------ | Ω a. |
| 4 | 29.5 | 20.8 | 95 | 67 | 6 | 5 | 0.8 | Ω a. ●° p. |
| 5 | 26.5 | 19.6 | 96 | 79 | 6 | 10 | 29 | Ω² a. ● p. |
| 6 | 23.2 | 21.9 | 96 | 97 | 10 | 10 | 147.5 | d a. ●² a. p |
| 7 | 23.5 | 21.6 | 95 | 94 | 10 | 10 | 21.3 | ● a. p. |
| 8 | 27.3 | 20.7 | 96 | 79 | 8 | 7 | ------ | Ω a. ϖ p. |
| 9 | 26.1 | 20.2 | 96 | 84 | 8 | 10 | 11.4 | Ω a. p° ●² p. |
| 10 | 28 | 20.4 | 97 | 73 | 5 | 4 | ------ | Ω ≡ a. ϖ p. |
| 11 | 28.5 | 22.2 | 93 | 70 | 9 | 8 | 12.7 | Ω a. p. ● p. |
| 12 | 26.5 | 21.8 | 96 | 82 | 7 | 10 | .5 | Ω ● a. d° p. |
| 13 | 27.3 | 22.4 | 97 | 75 | 9 | 8 | .5 | ● a. ϖ p. |
| 14 | 27.5 | 19.6 | 95 | 70 | 6 | 7 | 7.4 | Ω ≡° a. ◯° p. |
| 15 | 28.1 | 23 | 93 | 79 | 9 | 9 | 11.4 | ● d ⌈☇ ● p. |
| 16 | 26.8 | 24.2 | 95 | 97 | 10 | 10 | 62.5 | ● a. p. |
| 17 | 28.6 | 23.3 | 98 | 74 | 7 | 7 | ------ | ≡ Ω a. ☇ T d° p. |
| 18 | 28.5 | 23.6 | 96 | 79 | 7 | 8 | .5 | Ω ⊕ a. T ☇ ●° p. |
| 19 | 28.8 | 24.1 | 93 | 77 | 8 | 10 | 36.6 | Ω ⊕ a. ●² p. |
| 20 | 27.6 | 23.4 | 98 | 82 | 10 | 9 | .3 | Ω a. ●° p. |
| 21 | 27.7 | 23.5 | 97 | 85 | 10 | 9 | 31.2 | Ω d a. ● p. |
| 22 | 26.7 | 22.9 | 96 | 93 | 10 | 10 | 96.7 | ● a. ●² ⌈☇ p. |
| 23 | 27.5 | 23 | 92 | 77 | 10 | 9 | 17.8 | ●° ↙ a. p. ● p. |
| 24 | 27.6 | 23.2 | 92 | 76 | 8 | 7 | ------ | ●° ⌒ a. |
| 25 | 28.3 | 23.4 | 88 | 68 | 7 | 2 | ------ | Ω a. ☇ p. |
| 26 | 28.8 | 21.4 | 96 | 70 | 7 | 3 | ------ | Ω ≡° a. ☇² p. |
| 27 | 28.1 | 22.4 | 96 | 76 | 7 | 7 | 1.3 | Ω a. |
| 28 | 28.8 | 22.4 | 92 | 72 | 8 | 8 | 18.8 | ● a. ☇ p |
| Mean | 27.6 | 22 | 95 | 77.2 | 7.6 | 7.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 508.2 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | 24 | 79 | 70 | 10 | 8 | ------ | |
| 2 | ------ | 22.1 | 80 | 60 | 10 | 3 | ------ | Ω a. |
| 3 | ------ | 22.4 | 83 | 66 | 10 | 8 | ------ | |
| 4 | ------ | 22.3 | 82 | 74 | 10 | 10 | ------ | |
| 5 | ------ | 23.7 | 79 | 68 | 10 | 10 | ------ | d° a. |
| 6 | 28.4 | 22.6 | 70 | 71 | 10 | 10 | 6.2 | ● a. p. |
| 7 | 26.8 | ------ | 84 | 77 | 10 | 10 | 5.3 | ●° a. p. |
| 8 | 28.4 | ------ | 85 | 66 | 10 | 10 | ------ | ●° a. |
| 9 | 29.6 | 21.9 | 76 | 71 | 10 | 10 | 1.9 | Ω a. ●° p. |
| 10 | 30.2 | 23.8 | 83 | 72 | 10 | 10 | ------ | Ω a. d ϖ² p. |
| 11 | 29.8 | 23.1 | 91 | 73 | 10 | 10 | 2.5 | Ω² a. ◯² ϖ² p. |
| 12 | 30.3 | 23.8 | 88 | 73 | 9 | 10 | 1.5 | ●° a. ϖ Ω² p. |
| 13 | 28.4 | 22.2 | 83 | 68 | 10 | 10 | 10.7 | ● a. |
| 14 | 29.5 | 22.3 | 89 | 70 | 10 | 4 | ------ | Ω² a. d p. |
| 15 | 30 | 23.1 | 92 | 72 | 10 | 10 | ------ | d² a. |
| 16 | 31.6 | 24.4 | 87 | 77 | 10 | 10 | 20.6 | ● ⌈☇ p. |
| 17 | 29.8 | 24.6 | 88 | 81 | 6 | 10 | ------ | Ω² T a. ⌈☇ p. |
| 18 | 30.8 | 24.5 | 88 | 71 | 10 | 8 | 7.6 | Ω d° a. ● ⌈☇ p. |
| 19 | 27.6 | 23.8 | 91 | 88 | 10 | 10 | 47 | ● a. p. |
| 20 | 28.4 | 22.4 | 93 | 93 | 10 | 10 | 51.6 | ● a. ●² p. |
| 21 | 28.8 | 22.9 | 93 | 81 | 10 | 10 | 26.1 | ⌒° a. ● a. p. |
| 22 | 30 | 22.8 | 82 | 74 | 10 | 10 | .5 | ψ² d² ◯⁵ a. ☇ p |
| 23 | 30.9 | 21.7 | 87 | 72 | 10 | 4 | ------ | Ω a. ◯ p. |
| 24 | 29.9 | 22.4 | 79 | 59 | 6 | 6 | ------ | Ω a. |
| 25 | 29.4 | 21.6 | 83 | 69 | 2 | 1 | ------ | Ω² a. |
| 26 | 30.2 | 21.1 | 84 | 70 | 1 | 2 | ------ | Ω² a. |
| 27 | 31.2 | 21.6 | 83 | 73 | 4 | 7 | ------ | Ω a. |
| 28 | 30.2 | 23.2 | 87 | 71 | 4 | 2 | ------ | Ω a. |
| Mean | 29.6 | 22.9 | 84.6 | 72.5 | 8.6 | 8 | ------ | |
| Total | ---- | ------ | ------ | ------ | ------ | ------ | 181.5 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.6 | 24.3 | 90 | 80 | 6 | 8 | 3.5 | ●° d a. p. ⌒ p. |
| 2 | 29.8 | 24.4 | 90 | 80 | 6 | 8 | 1.5 | ●° a. p. |
| 3 | 32.3 | 24.7 | 82 | 53 | 8 | 3 | ------ | ●° a. |
| 4 | 30.6 | 24 | 75 | 75 | 10 | 9 | 2 | d° a. ● p. |
| 5 | 30.4 | 25 | 90 | 70 | 6 | 3 | 19.3 | ●° a. p. d ψ p. |
| 6 | 29.8 | 24.1 | 95 | 69 | 10 | 5 | 1.8 | ● d° a. |
| 7 | 29.6 | 24.3 | 82 | 72 | 6 | 8 | ------ | ψ° p. |
| 8 | 30.8 | 25 | 78 | 67 | 6 | 6 | ------ | ϖ d° p. |
| 9 | 31.4 | 24.6 | 76 | 64 | 1 | 4 | 1.8 | ϖ p. |
| 10 | 30.6 | 23.5 | 97 | 65 | 9 | 4 | 1 | ●° a. d° p. |
| 11 | 32.3 | 26.8 | 72 | 55 | 4 | 4 | ------ | d° a. ϖ° p. |
| 12 | 30 | 26 | 70 | 68 | 9 | 10 | 2.3 | d° a. p. |
| 13 | 30.4 | 24.6 | 89 | 78 | 8 | 8 | 31.1 | p° a. p. |
| 14 | 27.6 | 24 | 95 | 85 | 10 | 9 | 7.6 | ● a. d a. p. |
| 15 | 27.2 | 24.6 | 96 | 89 | 10 | 9 | 39.4 | ● a. d ϖ p. |
| 16 | 30.2 | 24.2 | 95 | 81 | 8 | 9 | 13 | ● d a. p |
| 17 | 30.7 | 24.6 | 90 | 84 | 4 | 6 | 1.3 | ●° a. d a. p. |
| 18 | 30 | 25.2 | 88 | 76 | 3 | 5 | ------ | d° a. |
| 19 | 29.4 | 24.6 | 87 | 75 | 2 | 8 | ------ | |
| 20 | 31.2 | 25.6 | 89 | 76 | 6 | 9 | 16 | d° ⌒° ● p. |
| 21 | 30.4 | 24 | 90 | 70 | 6 | 8 | ------ | ●° a ○° p |
| 22 | 30 | 23.6 | 85 | 68 | 3 | 8 | ------ | ϖ Ω a. ◯ p. |
| 23 | 31.2 | 23.6 | 93 | 73 | 3 | 8 | .5 | Ω a. d° p. |
| 24 | 30.8 | 24.4 | 92 | 73 | 4 | 8 | 3.8 | ●° ⊕° a. ●° d° p. |
| 25 | 30.7 | 22.7 | 94 | 71 | 9 | 6 | .5 | ●° a. d° p |
| 26 | 30.2 | 24.2 | 94 | 81 | 8 | 8 | 1.3 | ●° ○ a. d° p. |
| 27 | 27.2 | 24.5 | 93 | 86 | 10 | 10 | 6.1 | d a. p ☇² p. |
| 28 | ------ | ------ | 92 | ------ | 10 | 10 | 162.1 | ☇² a. ●² ↙² a. p. |
| Mean | 30.2 | 24.5 | 87.8 | 73.5 | 6.6 | 7.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 315.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### MAASIN.

[$\phi = 10° 08' N$; $\lambda = 124° 50' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* |  |
| 1 | 31 | 21.6 | 93 | 61 | 10 | 8 | ------ |  |
| 2 | 31 | 21.5 | 75 | 64 | 8 | 6 | ------ |  |
| 3 | 30.8 | 21.4 | 90 | 52 | 10 | 9 | ------ |  |
| 4 | 31.5 | 22.6 | 91 | 58 | 10 | 8 | ------ |  |
| 5 | 31.8 | 22.4 | 88 | 64 | 10 | 10 | 13.7 | p p. |
| 6 | 29 | 22.4 | 95 | 80 | 10 | 10 | 46.7 | d ● <$^{2}$ p. |
| 7 | 29.4 | 21.8 | 91 | 88 | 10 | 10 | 66.8 | d●a.●$^{2}$dΦ$^{2}$ψp. |
| 8 | 30 | 22.5 | 86 | 64 | 10 | 10 | ------ | ψ Φ p. |
| 9 | 29.8 | 20.4 | 91 | 78 | 10 | 10 | 9.7 | Ω$^{2}$ a. p ψ p. |
| 10 | 29.7 | 21.8 | 88 | 81 | 10 | 10 | ------ | ∞$^{2}$ Φ$^{2}$ p. |
| 11 | 28.9 | 22 | 89 | 75 | 10 | 10 | 14.5 | Ω$^{2}$ a. p ψ Φ° p. |
| 12 | 28 | 22.4 | 88 | 81 | 10 | 10 | 53.9 | d$^{2}$ ● a.d ψ ●$^{2}$ p. |
| 13 | 28.5 | 22 | 95 | 89 | 10 | 10 | ------ | Ω° a. ψ Φ p. |
| 14 | 28 | 20.5 | 95 | 78 | 10 | 10 | ------ | d ≡° ψ$^{2}$ p. |
| 15 | 28.8 | ------ | 95 | 86 | 10 | 10 | ------ | d a. |
| 16 | 30 | ------ | 92 | 82 | 10 | 10 | ------ | <$^{2}$ p. |
| 17 | 29.3 | 20.5 | 95 | 82 | 10 | 10 | 17 | p d° < p. |
| 18 | 29.4 | 20.4 | 91 | 78 | 10 | 10 | ------ |  |
| 19 | 28.8 | 24 | 94 | 83 | 10 | 10 | 87.4 | d$^{2}$ ● a. ●$^{2}$ d < p. |
| 20 | 28 | 22.7 | 95 | 87 | 10 | 10 | 20.8 | d p p. |
| 21 | 29 | 23.1 | 95 | 84 | 10 | 10 | 4.1 | d$^{2}$ ≡° p. |
| 22 | 29.2 | 23 | 91 | 80 | 10 | 10 | 18 | ∞$^{2}$ < p. |
| 23 | 28.5 | 23.6 | 97 | 84 | 10 | 10 | 20.3 | p a. d$^{2}$ a. p. ⌒° |
| 24 | 28.6 | 23.4 | 95 | 77 | 10 | 10 | ------ | < p. |
| 25 | 29.5 | 23.4 | 91 | 79 | 10 | 8 | ------ | d° a. |
| 26 | 29.4 | 23.3 | 93 | 73 | 10 | 7 | ------ |  |
| 27 | 30.3 | 23.2 | 91 | 76 | 10 | 5 | ------ |  |
| 28 | 31 | 23.2 | 95 | 70 | 10 | 8 | ------ |  |
| Mean | 29.5 | 22.3 | 91.6 | 76.2 | 9.9 | 9.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 372.9 |  |

### SAN JOSE, BUENAVISTA.

[$\phi = 10° 44' N$; $\lambda = 121° 55' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* |  |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 10 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 11 | 31.4 | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 12 | 33 | 22.5 | ------ | ------ | 6 | 8 | 6.9 | Ω° d a. ● p. |
| 13 | 31.2 | 22 | ------ | ------ | 10 | 7 | .8 | ● a. |
| 14 | 31.5 | 20 | ------ | ------ | 3 | 9 | 1.8 | Ω$^{2}$ a. d ● p. |
| 15 | 30.5 | 22.5 | ------ | ------ | 9 | 8 | 1 | ● a. |
| 16 | 30.6 | 23.5 | ------ | 64 | 10 | 7 | 4.6 | ● a. p. |
| 17 | 29 | 24.2 | 88 | 79 | 10 | 9 | ------ | ⊤ a. d° < p. |
| 18 | 30.1 | 23.7 | 88 | 77 | 9 | 9 | 2.3 | ⊤ d ● < p. |
| 19 | 28.1 | 23.7 | 92 | 85 | 10 | 10 | .8 | ●° a. p. |
| 20 | 28.6 | 24.4 | 78 | 73 | 10 | 10 | ------ |  |
| 21 | 28 | 23.5 | 87 | 95 | 8 | 10 | 12.2 | d a. p. ● p. |
| 22 | 29.5 | 23 | 91 | 71 | 5 | 8 | ------ | d° a. |
| 23 | 30.4 | 21 | 91 | 67 | 1 | 1 | ------ | Ω$^{2}$ a. |
| 24 | 30.5 | 20.4 | 92 | 55 | 1 | 1 | ------ | Ω$^{2}$ a. |
| 25 | 29.6 | 20.1 | 96 | 71 | 0 | 1 | 1.5 | Ω a. |
| 26 | 29.9 | 23 | 92 | 74 | 8 | 1 | ------ | ● d a. |
| 27 | 29.9 | 21 | 95 | 70 | 1 | 1 | ------ | Ω a. |
| 28 | 31.4 | 21.9 | 96 | 68 | 0 | 1 | ------ | Ω$^{2}$ a. |
| Mean | 30.2 | 22.4 | 90.5 | 73 | 5.9 | 5.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### CUYO.

[$\phi = 10° 51' N$; $\lambda = 121° 01' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* |  |
| 1 | 30.8 | 23.9 | 91 | 73 | 7 | 8 | ------ | Ω a. |
| 2 | 31 | 23.6 | 83 | 63 | 9 | 8 | ------ | Ω a. |
| 3 | 30.6 | 25.7 | 75 | 60 | 9 | 7 | ------ | Ω a. ⌒ p. |
| 4 | 31 | 25.9 | 84 | 66 | 7 | 8 | ------ | Ω a. |
| 5 | 30.1 | 25.9 | 76 | 66 | 9 | 9 | ------ | Ω a. |
| 6 | 30.1 | 25.5 | 86 | 71 | 10 | 9 | ------ | Ω a. |
| 7 | 29.4 | 25.4 | 81 | 65 | 10 | 10 | ------ | d$^{2}$ a. |
| 8 | 30.1 | 25.5 | 77 | 61 | 9 | 9 | ------ | Ω a. |
| 9 | 29.9 | 25.1 | ------ | 63 | 9 | 8 | ------ |  |
| 10 | 29.3 | 25.3 | 81 | 68 | 8 | 4 | ------ |  |
| 11 | 30.5 | 25.1 | 85 | 69 | 9 | 7 | ------ | Ω a. |
| 12 | 30.6 | 25.5 | 89 | 71 | 8 | 8 | ------ | Ω a. |
| 13 | 29.1 | 24.1 | 71 | 62 | 9 | 8 | ------ | Ω$^{2}$ d$^{2}$ a. |
| 14 | 29.7 | 24.6 | 82 | 69 | 9 | 6 | ------ | Ω a. d$^{2}$ p. |
| 15 | 30.1 | 25.7 | 76 | 68 | 8 | 8 | ------ | Ω a. |
| 16 | 30.2 | 26 | 79 | 68 | 8 | 7 | ------ | Ω a. |
| 17 | 31 | 25.7 | 82 | 65 | 9 | 4 | ------ | < p. |
| 18 | 31 | 25.9 | 91 | 68 | 7 | 7 | ------ | Ω a. ◯ p. |
| 19 | 27.8 | 25.4 | 80 | 73 | 9 | 9 | ------ | d° p. |
| 20 | 27.3 | 24.9 | ------ | 74 | 10 | 10 | ------ | p° p. |
| 21 | 28.6 | 24.7 | 81 | 73 | 9 | 7 | ------ | Ω a. d p. |
| 22 | 29.3 | 24.6 | 82 | 67 | 8 | 7 | ------ | Ω a. |
| 23 | 30 | 24.5 | 83 | 64 | 9 | 4 | ------ | Ω a. |
| 24 | 30 | 24.2 | 82 | 66 | 7 | 4 | ------ | Ω a. |
| 25 | 30.6 | 24.8 | 80 | 71 | 8 | 6 | ------ | Ω a. |
| 26 | 30.1 | 24.8 | 85 | 76 | 9 | 9 | ------ | Ω a. d° p. |
| 27 | 30.2 | 24.2 | 87 | 67 | 7 | 5 | ------ | Ω a. |
| 28 | 30.6 | 24.6 | 87 | 67 | 9 | 7 | ------ | Ω a. |
| Mean | 30 | 25 | 82.2 | 67.6 | 8.5 | 7.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### BORONGAN.

[$\phi = 10° 37' N$; $\lambda = 125° 26' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* |  |
| 1 | ------ | 21 | 96 | 65 | 3 | 3 | ------ | Ω ≡° a. |
| 2 | 29.5 | 19.2 | 97 | 60 | 1 | 2 | ------ | Ω ≡ a. |
| 3 | 29.9 | 19.6 | 97 | 62 | 3 | 7 | ------ | Ω ≡ ◯ a. Φ° p. |
| 4 | 30.3 | 23.3 | 92 | 64 | 7 | 6 | 3.9 | Ω ●° ⊕ a. ●° p. |
| 5 | 30.2 | 23.4 | 73 ? | 64 | 6 | 5 | 2.5 | ↙° p. |
| 6 | 29 | 23.4 | 90 | 82 | 10 | 10 | 78.8 | ↙° a. ● a. p. |
| 7 | 27.3 | 22 | ------ | 70 | 10 | 9 | 10.1 | ●$^{2}$ a. ● ψ p. |
| 8 | 28.9 | 22.1 | 75 | 56 | 7 | 5 | 1 | ● ◯ a. d ψ p. |
| 9 | 28.5 | 20.3 | 96 | 83 | 9 | 7 | 28.4 | ● ≡ a. ● Φ° d p. |
| 10 | 29.7 | 22 | 97 | 69 | 8 | 7 | 17.3 | ≡° a. ● a. p. ⌒ p. |
| 11 | 29.5 | 22.6 | 97 | 79 | 7 | 5 | 25.4 | ≡ d a. ● a. p. |
| 12 | 28.5 | 23.8 | 86 | 82 | 8 | 5 | 22.7 | ≡ a. ● a. p. |
| 13 | 28.5 | 22.8 | 75 ? | 59 | 3 | 5 | 2.8 | ● a. p. |
| 14 | 28.6 | 20.6 | 96 | 90 | 9 | 9 | 30.7 | d ● a. p. |
| 15 | 27 | 23.4 | 95 | 95 | 10 | 7 | 35.3 | ●$^{2}$ Γ↘ a. d < p. |
| 16 | 27.8 | 23 | 97 | 81 | 10 | 8 | 2.6 | ● a. ●° p. |
| 17 | 29.6 | 22 | 99 | 75 | 5 | 5 | ------ | Ω ≡$^{2}$ a. ◯ < p. |
| 18 | 28.9 | 22 | 97 | 79 | 4 | 7 | 3 | Ω ≡ a. ● < ⊤ p. |
| 19 | 26.3 | 22.5 | 97 | 87 | 9 | 9 | 55.9 | d a. ●$^{2}$ ⊤ p. |
| 20 | 29.3 | 22.8 | 98 | 79 | 8 | 7 | 106.7 | ● d ≡ a. ●$^{2}$ p. |
| 21 | 25.3 | 22.5 | 98 | 88 | 9 | 10 | 25.1 | ≡ ●° a. ● p. |
| 22 | 25.7 | 22.7 | 97 | 88 | 10 | 8 | 32 | ●$^{2}$ a. ●° p. |
| 23 | 29 | 21.8 | 96 | 88 | 7 | 7 | 4.4 | Ω° ≡° a. ● p. |
| 24 | 31 | 21.8 | 95 | 78 | 2 | 7 | ------ | Ω ≡° a. d ⌒ p. |
| 25 | 32.1 | 21.6 | 96 | 68 | 2 | 4 | ------ | Ω ≡° a. < p. |
| 26 | 32 | 22.6 | 96 | 63 | 5 | 6 | .5 | Ω ≡° d a. ◯ ●° p. |
| 27 | 30 | 22.1 | 95 | 86 | 7 | 8 | 1.3 | d$^{2}$ ● <° p. |
| 28 | 30.4 | 22.7 | 97 | 82 | 7 | 7 | 6.1 | Ω ≡ a. ⊤ ● p. |
| Mean | 29 | 22.1 | 93.3 | 75.8 | 6.6 | 6.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 496.5 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### MASBATE.

[$\phi=12° 22' N; \lambda=123° 36' E$]

| Day. | Temperature | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.6 | 23.4 | 98 | ------ | 8 | 8 | ------ | |
| 2 | 30.2 | 22.6 | 98 | ------ | 8 | 8 | ------ | |
| 3 | 29.6 | 22 | 100 | ------ | 9 | 9 | ------ | |
| 4 | 30.8 | 23 | 98 | ------ | 10 | 8 | ------ | |
| 5 | 30.8 | 25 | 96 | ------ | 10 | 8 | ------ | |
| 6 | 30.8 | 25 | 98 | ------ | 10 | 9 | 52.1 | |
| 7 | 28 | 22.6 | 82 | ------ | 10 | 10 | 13.2 | |
| 8 | 28.8 | 22 | 98 | ------ | 9 | 9 | ------ | |
| 9 | 29.4 | 24 | 98 | ------ | 8 | 7 | 1.5 | |
| 10 | 26.8 | 23.6 | ------ | ------ | 10 | 9 | 3.6 | |
| 11 | 29.6 | 24.5 | 98 | ------ | 9 | 9 | ------ | |
| 12 | 28.8 | 23.6 | 98 | ------ | 9 | 10 | 35 | |
| 13 | 29.2 | 23.4 | 98 | ------ | 8 | 8 | ------ | |
| 14 | 25.8 | 23.2 | 99 | ------ | 10 | 10 | 6.1 | |
| 15 | ------ | 23.5 | 98 | ------ | 10 | 10 | ------ | |
| 16 | 27 | 24.2 | 98 | ------ | 10 | 9 | 19 | |
| 17 | 27.2 | 23.8 | 100 | ------ | 10 | 9 | 1.5 | |
| 18 | 29 | 24 | 98 | ------ | 9 | 9 | ------ | |
| 19 | 24.5 | 24.4 | 98 | ------ | 9 | 10 | 23.6 | |
| 20 | 24.2 | 23 | 98 | ------ | 10 | 10 | 69.8 | |
| 21 | 24.8 | 22.6 | 99 | ------ | 10 | 10 | 8.9 | |
| 22 | 26.8 | 23.4 | 98 | ------ | 10 | 9 | .8 | |
| 23 | 28.2 | 23 | 98 | ------ | 10 | 9 | 4.6 | |
| 24 | 28.2 | 22.8 | 99 | ------ | 9 | 8 | ------ | |
| 25 | 28.2 | 23.6 | 98 | ------ | 10 | 10 | 1.3 | |
| 26 | 26.2 | 23.8 | 98 | ------ | 9 | 9 | .8 | |
| 27 | 27.8 | 24 | 98 | ------ | 9 | 6 | .3 | |
| 28 | 29.4 | 24.2 | 98 | ------ | 9 | 4 | ------ | |
| Mean | 28.2 | 23.5 | 97.6 | ------ | 9.4 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 242.1 | |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi=13° 24' N; \lambda=144° 38' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 27.4 | 23.6 | 83 | 78 | 5 | 10 | 6.4 | |
| 2 | 29 | 23.8 | 84 | 70 | 9 | 5 | ------ | |
| 3 | 28 | 24.4 | 84 | 74 | 3 | 10 | 3.8 | |
| 4 | 28 | 24.2 | 85 | 77 | 6 | 10 | 7.7 | |
| 5 | 28 | 23.6 | 92 | 76 | 10 | 5 | 2.8 | |
| 6 | 27.6 | 23 | 91 | 73 | 10 | 10 | 8.9 | |
| 7 | 27.6 | 24 | 83 | 72 | 4 | 10 | ------ | |
| 8 | 28 | 24.6 | 83 | 70 | 8 | 10 | ------ | |
| 9 | 27.4 | 24.4 | 83 | 77 | 10 | 10 | 11.4 | |
| 10 | 27.6 | 23.2 | 81 | 77 | 8 | 10 | ------ | |
| 11 | 27 | 25 | 76 | 72 | 10 | 5 | ------ | |
| 12 | 26.6 | 24.2 | 82 | 86 | 8 | 10 | 4.7 | |
| 13 | 27.2 | 23.4 | 90 | 87 | 10 | 10 | 76.2 | |
| 14 | 25.6 | 23.6 | 95 | 91 | 10 | 10 | 52.1 | |
| 15 | 27.8 | 23.4 | 82 | 74 | 10 | 4 | 3 | |
| 16 | 28 | 24.4 | 84 | 84 | 8 | 10 | 20.8 | |
| 17 | 27.8 | 23 | 90 | 77 | 10 | 10 | 2.5 | |
| 18 | 29.2 | 25.6 | 84 | 71 | 6 | 4 | ------ | |
| 19 | 29.4 | 25 | 79 | 64 | 10 | 10 | ------ | |
| 20 | 29 | 22.6 | 83 | 64 | 8 | 10 | ------ | |
| 21 | 28.4 | 22.8 | 83 | 69 | 10 | 10 | 3.8 | |
| 22 | 28.6 | 23.4 | 93 | 74 | 8 | 10 | 5 | |
| 23 | 26.4 | 23.2 | 92 | 92 | 10 | 10 | 8.9 | |
| 24 | 27.4 | 24.8 | 88 | 75 | 10 | 10 | ------ | |
| 25 | 27.6 | 25.2 | 85 | 81 | 10 | 10 | 1.5 | |
| 26 | 28 | 24.4 | 87 | 92 | 10 | 10 | 5.1 | |
| 27 | 29.4 | 24.6 | 84 | 68 | 6 | 4 | 2 | |
| 28 | 27.4 | 24.6 | 83 | 77 | 10 | 10 | 18.5 | |
| Mean | 27.8 | 24 | 85.3 | 76.5 | 8.5 | 8.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 287.4 | |

### CALAPAN.

[$\phi=13° 25' N; \lambda=121° 11' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.7 | 21.4 | 93 | 61 | 9 | 8 | ------ | |
| 2 | 30.3 | 19 | 90 | 64 | 8 | 8 | ------ | |
| 3 | 30.6 | 20.9 | 95 | 57 | 10 | 10 | 0.5 | ≡° p a. |
| 4 | 30.7 | 20.6 | 94 | 70 | 10 | 10 | .5 | |
| 5 | 29.8 | 23 | 90 | 65 | 10 | 10 | ------ | p d° a. |
| 6 | 28.4 | 21.8 | 92 | 77 | 10 | 10 | 13.5 | ● a. d° p p. |
| 7 | 28.2 | 22.1 | 89 | 70 | 10 | 10 | .8 | p° a. p. |
| 8 | 29.2 | 23.1 | 88 | 73 | 10 | 10 | 7.9 | p a. p. ● Φ p. |
| 9 | 29.5 | 21.5 | 87 | 68 | 10 | 10 | 6.4 | p a. p. |
| 10 | 28.6 | 22.5 | 85 | 72 | 10 | 10 | 3.1 | p° a. p. |
| 11 | 28 | 22.2 | 84 | 91 | 10 | 10 | 13.5 | ● d p. |
| 12 | 29 | 22.8 | 93 | 75 | 10 | 10 | 13.5 | d a. ●° p p. |
| 13 | 28.6 | 21.1 | 90 | 68 | 10 | 10 | 15.2 | ● a. p. ∪ Φ p. |
| 14 | 28.8 | 21.6 | 98 | 71 | 10 | 10 | .5 | d° ⌒° a. |
| 15 | 29.8 | 21.2 | 80 | 65 | 10 | 10 | ------ | |
| 16 | 29.8 | 21.1 | 85 | 71 | 10 | 10 | ------ | |
| 17 | 30.2 | 23.1 | 89 | 73 | 10 | 9 | 3 | ●° a. ● p. |
| 18 | 28 | 22.9 | 94 | 93 | 10 | 10 | 11.4 | d° a. d ● p. |
| 19 | 27 | 21 | 73 | 65 | 10 | 10 | .8 | ●° a. p. |
| 20 | 26.4 | 22.1 | 71 | 75 | 10 | 10 | 1.3 | p° p. |
| 21 | 26 | 23 | 80 | 72 | 10 | 10 | .9 | ●° a. p° p. |
| 22 | 28.2 | 21.6 | 83 | 67 | 10 | 10 | ------ | ●° p. |
| 23 | 29.7 | 20 | 94 | 69 | 4 | 3 | ------ | |
| 24 | 29 | 21.2 | 92 | 70 | 5 | 9 | ------ | |
| 25 | 28 | 21.1 | 91 | 72 | 10 | 10 | 2.8 | ●° p° p. |
| 26 | 26.9 | 21.3 | 96 | 78 | 10 | 10 | 1.8 | ●° a. d° p. |
| 27 | 29.5 | 21.3 | 95 | 71 | 10 | 10 | ------ | |
| 28 | 29.6 | 20.7 | 95 | 67 | 10 | 3 | ------ | p a. |
| Mean | 28.8 | 21.6 | 88.8 | 71.1 | 9.5 | 9.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 97.4 | |

### VIRAC.

[$\phi=13° 35' N; \lambda=124° 14' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.7 | 21 | 95 | 64 | 8 | 4 | ------ | |
| 2 | 30.3 | 19.5 | 96 | 73 | 3 | 6 | ------ | ⊕ ◯ a. |
| 3 | 31 | 19.4 | 95 | 63 | 4 | 8 | ------ | Ω ⊕ ◯ a. |
| 4 | 31.4 | 20.5 | 91 | 64 | 7 | 7 | ------ | Ω a. |
| 5 | 31.3 | 20.5 | 92 | 56 | 7 | 8 | 3.8 | ● p. |
| 6 | 30 | 22.5 | 85 | 91 | 9 | 10 | 34 | ●° a. ● ↙° p. |
| 7 | 30.3 | 22.5 | 83 | 63 | 9 | 8 | ------ | |
| 8 | 29.7 | 21.5 | 75 | 61 | 7 | 8 | ------ | |
| 9 | 31.2 | 19.9 | 89 | 57 | 7 | 7 | .5 | Ω° a. p p. |
| 10 | 29.2 | 22.5 | 80 | 68 | 8 | 7 | 27.2 | ●° a. ● p. |
| 11 | 30 | 23.2 | 90 | 71 | 10 | 9 | 6.9 | ●² ↙° a. ●° d p. |
| 12 | 30.5 | 23 | 83 | 77 | 8 | 8 | 7.9 | d ⌒ a. ● p. |
| 13 | 30.4 | 19 | 89 | 70 | 9 | 9 | 1.8 | ●° p. |
| 14 | 29 | 22 | 89 | 69 | 9 | 10 | 9.9 | d ●° p. |
| 15 | 27.2 | 22.5 | 95 | 92 | 10 | 10 | 46.2 | ● a. ●² p. |
| 16 | 27.4 | 23.3 | 98 | 88 | 10 | 10 | 41.2 | d a. ● a. p. |
| 17 | 29.2 | 23.2 | 98 | 94 | 9 | 10 | 18 | ●° a. ● p. |
| 18 | 29.3 | 22.3 | 99 | 84 | 8 | 9 | 12.3 | ●° a. ● ⌒ d p. |
| 19 | 25.9 | 22.3 | 91 | 89 | 10 | 10 | 48.5 | d ●² a. ●° p. |
| 20 | 25.7 | 22.4 | 88 | 90 | 10 | 10 | 69.6 | ●° a. ●² p. |
| 21 | 25 | 22 | 98 | 83 | 10 | 10 | 12.9 | ●² a. ●° p. |
| 22 | 27 | 22 | 95 | 88 | 10 | 10 | 9.1 | d a. p. ● p. |
| 23 | 28.9 | 21.9 | 97 | 79 | 9 | 9 | 3.1 | ● a. d° p. |
| 24 | 30 | 22 | 83 | 77 | 8 | 9 | 10.2 | ● p. |
| 25 | 26.2 | 22.5 | 94 | 90 | 10 | 10 | 28.2 | ● d a. ● ⌒ p. |
| 26 | 26.4 | 22.3 | 90 | 86 | 10 | 10 | 23.7 | ⊤ ● a. d p. |
| 27 | 28.9 | 22 | 98 | 78 | 8 | 9 | 5.4 | ⊕ ◯ d a. ● p. |
| 28 | 30.2 | 20.9 | 97 | 74 | 5 | 6 | ------ | Ω² a. |
| Mean | 29 | 21.7 | 91.2 | 76.4 | 8.3 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 420.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.6 | 19.8 | 99 | 59 | 7 | 5 | ------ | |
| 2 | 31 | 19 | 99 | 62 | 6 | 6 | ------ | ≡$^2$ ⌓ a. |
| 3 | 30.5 | 17.5 | 99 | 69 | 5 | 8 | ------ | ≡$^2$ ⌓ a. |
| 4 | 30.7 | 18.2 | 99 | 63 | 7 | 8 | ------ | ≡$^2$ ⌓ a. |
| 5 | 31.8 | 19.2 | 91 | 61 | 6 | 9 | ------ | |
| 6 | 30.3 | 21.2 | 95 | 67 | 10 | 9 | 7.1 | ● p. |
| 7 | 30.5 | 22 | 78 | 65 | 10 | 9 | ------ | |
| 8 | 31 | 19.3 | 94 | 89 | 7 | 9 | ------ | |
| 9 | 30 | 19.6 | 88 | 58 | 8 | 7 | .5 | p p. |
| 10 | 29.5 | 22 | 91 | 83 | 9 | 10 | 3.9 | d ●° p. |
| 11 | 26.3 | 22 | 97 | 92 | 10 | 10 | 23.8 | ● a. p. |
| 12 | 30.1 | 20.8 | 98 | 76 | 9 | 9 | 2.5 | ●° a. p. d p. |
| 13 | 29.2 | 20.5 | 87 | 51 | 7 | 8 | 2.8 | ◠ ●° p. |
| 14 | 29.3 | 21.1 | 91 | 69 | 8 | 9 | 11.4 | ● p. |
| 15 | 26.5 | 22.5 | 96 | 90 | 10 | 10 | 20 | ● a. p. |
| 16 | 28.5 | 22.6 | 97 | 85 | 10 | 10 | 24.1 | d ●° a. ● p. |
| 17 | 28.4 | 22.7 | 96 | 84 | 10 | 9 | 8.6 | ●° a. p. ◠ p. |
| 18 | 27.4 | 22.7 | 97 | 86 | 10 | 9 | 130.9 | d ● a. ●$^2$ p. |
| 19 | 25 | 21.4 | 96 | 82 | 10 | 10 | 7.8 | ●$^2$ a. d ●° p. |
| 20 | 24.5 | 21.1 | 93 | 88 | 10 | 10 | 17.1 | d ●° a. ● p. |
| 21 | 25 | 21.4 | 93 | 83 | 10 | 10 | .3 | ●° a. |
| 22 | 28.5 | 21.5 | 91 | 68 | 10 | 9 | ------ | |
| 23 | 28.5 | 22.1 | 92 | 68 | 8 | 7 | ------ | |
| 24 | 28.5 | 21.2 | 86 | 75 | 8 | 8 | 11.4 | ●° p. |
| 25 | 26 | 22 | 97 | 92 | 10 | 10 | 26.9 | d ●° a. ● p. |
| 26 | 26.5 | 21.5 | 98 | 84 | 10 | 10 | 11.4 | ●° a. ● p. |
| 27 | 28.2 | 21.5 | 98 | 79 | 10 | 8 | 6.1 | ● a. |
| 28 | 29.7 | 20.8 | 97 | 67 | 7 | 6 | ------ | |
| Mean | 28.7 | 21 | 94 | 74.8 | 8.6 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 316.6 | |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 34 | 22 | 95 | 54 | 3 | 4 | ------ | |
| 2 | 32.8 | 19.2 | 95 | 56 | 1 | 3 | ------ | |
| 3 | 32.9 | 20.6 | 95 | 58 | 1 | 5 | ------ | |
| 4 | 32.4 | 19.8 | 91 | 59 | 3 | 7 | 0.8 | d$^2$ p. |
| 5 | 30.8 | 21.7 | 94 | 57 | 7 | 7 | ------ | |
| 6 | 28.5 | 21 | 94 | 88 | 7 | 10 | 18.8 | ◠ a. ● a. p. |
| 7 | 30 | 21.1 | 95 | 58 | 9 | 7 | ------ | |
| 8 | 29.9 | 21.6 | 83 | 68 | 9 | 7 | ------ | |
| 9 | 31.4 | 19.2 | 94 | 55 | 6 | 5 | ------ | |
| 10 | 32.3 | 21.2 | 88 | 57 | 4 | 7 | ------ | |
| 11 | 29.8 | 21 | 95 | 97 | 5 | 10 | 44.5 | ● a. p. |
| 12 | 31.8 | 21.8 | 93 | 80 | 5 | 7 | 5.6 | d$^2$ a. ● p. |
| 13 | 29.7 | 20.8 | 88 | 61 | 7 | 7 | .5 | d$^2$ a. |
| 14 | 29.4 | 19.1 | 91 | 71 | 5 | 7 | ------ | |
| 15 | 30.2 | 18.7 | 96 | 62 | 4 | 6 | ------ | |
| 16 | 31.1 | 19.6 | 93 | 73 | 7 | 9 | ------ | |
| 17 | 29.4 | 21.9 | 96 | 76 | 9 | 7 | .8 | ⌓ a. d$^2$ p. |
| 18 | 30.4 | 21 | 97 | 70 | 9 | 7 | ------ | ◠ a. |
| 19 | 29 | 22.8 | 80 | 62 | 7 | 7 | ------ | |
| 20 | 29.9 | 20 | 91 | 58 | 6 | 7 | ------ | |
| 21 | 26.6 | 20.8 | 91 | 73 | 9 | 9 | ------ | |
| 22 | 29.6 | 17.3 | 94 | 65 | 6 | 7 | ------ | |
| 23 | 31.2 | 17.7 | 92 | 58 | 1 | 7 | ------ | |
| 24 | 30.5 | 18 | 94 | 60 | 1 | 7 | ------ | |
| 25 | 30.7 | 18.6 | 92 | 62 | 9 | 7 | 1.5 | d$^2$ p. |
| 26 | 27.6 | 21.2 | 95 | 77 | 9 | 10 | 2.3 | ≡° a. d$^2$ a. p. |
| 27 | 29.6 | 20.2 | 95 | 68 | 9 | 6 | ------ | |
| 28 | 31.2 | 19.5 | 96 | 63 | 1 | 4 | ------ | |
| Mean | 30.5 | 20.3 | 92.6 | 65.9 | 5.7 | 6.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 74.8 | |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.1 | 17.6 | 97 | 62 | 2 | 4 | ------ | ≡ a. |
| 2 | 31.8 | 18.8 | 98 | 61 | 7 | 8 | ------ | |
| 3 | 31.5 | 19 | 97 | 63 | 2 | 9 | ------ | ⌓ ≡ a. |
| 4 | 31.7 | 19.3 | 98 | 63 | 3 | 7 | 1.8 | ● p. |
| 5 | 30 | 19.8 | 96 | 68 | 5 | 9 | 2.5 | ⌓ ≡ a. ● p. |
| 6 | 28.6 | 18.4 | 98 | 73 | 10 | 10 | 15 | ● p. |
| 7 | 25.3 | 18 | 98 | 81 | 8 | 9 | 2.8 | d a. p. ● p. |
| 8 | 25.8 | 17.7 | 98 | 80 | 10 | 8 | 1.3 | ● a. |
| 9 | 25.5 | 18.3 | 97 | 80 | 2 | 5 | ------ | |
| 10 | 27.4 | 18.8 | 98 | 73 | 2 | 7 | ------ | |
| 11 | 29.1 | 19 | 98 | 77 | 6 | 9 | 9.9 | ⌓ ≡ a. ● p. |
| 12 | 26.8 | 18.1 | 98 | 82 | 10 | 7 | 4.1 | ● a. p. |
| 13 | 27.3 | 18 | 98 | 73 | 2 | 6 | ------ | ⌓ ≡ a. |
| 14 | 29.1 | 18.4 | 98 | 72 | 5 | 5 | ------ | d a. |
| 15 | 29 | 16.2 | 98 | 73 | 2 | 8 | ------ | |
| 16 | 29.4 | 17.7 | 98 | 69 | 2 | 3 | ------ | |
| 17 | 29.8 | 19 | 98 | 65 | 2 | 6 | ------ | |
| 18 | 30.1 | 18.5 | 97 | 65 | 9 | 8 | ------ | ⌓ ≡ a. d° p. |
| 19 | 29.2 | 18 | 98 | 78 | 6 | 8 | ------ | |
| 20 | 27.5 | 18.3 | 98 | 77 | 7 | 9 | ------ | |
| 21 | 28 | 18.5 | 98 | 70 | 2 | 5 | ------ | ≡ a. |
| 22 | 29.6 | 18.8 | 98 | 65 | 7 | 3 | ------ | ⌓ ≡ a. |
| 23 | 30.1 | 16.2 | 98 | 65 | 2 | 2 | ------ | |
| 24 | 30 | 18 | 97 | 67 | 5 | 7 | ------ | |
| 25 | 29.8 | 17.6 | 98 | 75 | 8 | 6 | ------ | ⌓ ≡ a. |
| 26 | 27.6 | 18.6 | 97 | 74 | 9 | 10 | 6.3 | ⌓ ≡ a. d ● p. |
| 27 | 27.1 | 19.1 | 97 | 73 | 2 | 4 | ------ | |
| 28 | 30 | 19 | 98 | 69 | 10 | 8 | ------ | ⌓ ≡ a. |
| Mean | 28.9 | 18.3 | 97.7 | 71.2 | 5.2 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 43.7 | |

### SANTA CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.3 | 20.7 | 97 | 69 | 1 | 8 | ------ | ⌓ a. |
| 2 | 32.4 | 19.1 | 98 | 62 | 1 | 4 | ------ | ⌓$^2$ ≡ a. |
| 3 | 31.8 | 20.9 | 90 | 62 | 2 | 3 | ------ | ⌓ a. ⊕ p. |
| 4 | 31.5 | 19.8 | 97 | 69 | 9 | 8 | 1 | ⌓ a. ● ⊕ p. |
| 5 | 31.5 | 21.5 | 90 | 79 | 9 | 9 | 18 | ●° a. ● p. |
| 6 | 29.2 | 21.3 | 98 | 89 | 10 | 9 | 23.4 | ● a. p. d p. |
| 7 | ------ | 21 | 80 | 64 | 9 | 8 | .3 | ● ↙° a. d p. |
| 8 | 28.6 | 21.4 | 88 | 71 | 9 | 9 | .8 | ●° a. d ↙° p. |
| 9 | 29.3 | 19.7 | 85 | 61 | 8 | 7 | ------ | ⌓ ↙° a. d ↙° p. |
| 10 | 29.3 | 23.1 | 75 | 63 | 7 | 8 | 2.5 | ↙° ●° a. p. |
| 11 | 29 | 21.6 | 96 | 92 | 9 | 10 | 21.6 | ●° a. ● p. |
| 12 | 27.2 | 22.6 | 91 | 74 | 9 | 9 | 6.8 | ● a. ●° p. |
| 13 | 28.2 | 18.7 | 89 | 64 | 8 | 6 | .3 | d ◠° a. ⊕ p. |
| 14 | 28.6 | 19.6 | 96 | 68 | 9 | 9 | ------ | ●° a. d ⊕ p. |
| 15 | 29.1 | 18.6 | 98 | 59 | 8 | 5 | ------ | ⌓$^2$ ∞ d a. d p. |
| 16 | 30.1 | 19.4 | 94 | 59 | 9 | 9 | .3 | ⌓° a. d p. |
| 17 | 29.5 | 21.4 | 97 | 68 | 9 | 6 | .4 | ●° d a. ◠° ●° p. |
| 18 | 29.9 | ------ | 86 | 76 | 8 | 9 | .5 | ⌓ ●° ◠ a. ↙° ◠ d |
| 19 | 29.1 | ------ | 72 | 60 | 9 | 9 | ------ | d ↙° a. ↙° p. |
| 20 | 27.9 | ------ | 73 | 60 | 9 | 8 | .8 | d p. |
| 21 | 27:3 | 20.4 | 87 | 71 | 10 | 9 | ------ | d a. |
| 22 | 27.6? | 19.5 | 92 | 58 | 9 | 8 | ------ | ⌓ a. |
| 23 | 29.3 | 17.9 | 98 | 56 | 4 | 4 | ------ | ⌓ a. |
| 24 | 30.8 | 17.9 | 94 | 61 | 1 | 8 | ------ | ⌓ a. ◠ p. |
| 25 | 29.3 | 19.2 | 79 | 69 | 9 | 9 | 1 | ⌓° d a. ●° p. |
| 26 | 29 | 21.1 | 96 | 83 | 9 | 9 | 4.6 | ●° a. p. |
| 27 | 28.4 | 20.3 | 98 | 65 | 7 | 9 | ------ | ≡ ● a. |
| 28 | 29.4? | 19.6 | 99 | 53 | 4 | 3 | ------ | ⌓$^2$ a. |
| Mean | 29.5? | 20.2 | 90.5 | 67.3 | 7.3 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 82.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.3 | 20.2 | 89 | 56 | 1 | 4 | ------ | Ω² a. |
| 2 | 32.5 | 20.1 | 95 | 65 | 2 | 5 | ------ | Ω² ≡° a. |
| 3 | 32.3 | 20.4 | 89 | 42 | 1 | 5 | ------ | Ω° a. |
| 4 | 31.7 | 19.3 | 89 | 57 | 4 | 7 | 1 | ⊖ p. |
| 5 | 28.6 | 20 | 95 | 87 | 8 | 10 | 1.5 | ≡° ⌒ a. d° p. |
| 6 | 28.7 | 19.8 | 97 | 76 | 10 | 9 | 2.3 | d a. |
| 7 | 30.3 | 20.9 | 80 | 57 | 8 | 8 | ------ |  |
| 8 | 29.2 | 20.8 | 70 | 57 | 9 | 7 | ------ |  |
| 9 | 30.2 | 19.3 | 80 | 50 | 7 | 4 | ------ |  |
| 10 | 30.5 | 20.8 | 73 | 48 | 3 | 5 | ------ | ⊕ p. |
| 11 | 28.8 | 19.9 | 86 | 87 | 2 | 10 | 9.3 | d² ● p. |
| 12 | 30.6 | 20.3 | 94 | 56 | 9 | 9 | ------ | d° a. p. ⌒ p. |
| 13 | 29.6 | 20.1 | 86 | 53 | 9 | 3 | ------ |  |
| 14 | 31 | 18.6 | 87 | 58 | 10 | 8 | ------ | ⌣ p. |
| 15 | 31.5 | 18.9 | 93 | 65 | 8 | 6 | ------ | Ω° a. ⌣ p. |
| 16 | 31.9 | 19.1 | 90 | 63 | 2 | 8 | ------ | Ω° a. |
| 17 | 30.2 | 20.5 | 92 | 67 | 8 | 8 | ------ |  |
| 18 | 29.4 | 20.3 | 95 | 60 | 9 | 9 | ------ | d° a. |
| 19 | 28.6 | 20.8 | 70 | 59 | 7 | 10 | ------ |  |
| 20 | 29.4 | 20.7 | 66 | 51 | 9 | 6 | ------ |  |
| 21 | 30.8 | 20.4 | 82 | 50 | 9 | 7 | ------ |  |
| 22 | 30.3 | 18.2 | 91 | 57 | 2 | 6 | ------ |  |
| 23 | 30.7 | 17.9 | 92 | 57 | 1 | 4 | ------ |  |
| 24 | 31.8 | 17.8 | 85 | 47 | 1 | 5 | ------ | Ω° a. |
| 25 | 28.9 | 19.4 | 89 | 55 | 7 | 9 | .1 | d° p. |
| 26 | 27.1 | 20.3 | 92 | 84 | 9 | 10 | 3.5 | d° a. p. |
| 27 | 29.3 | 19.8 | 95 | 72 | 8 | 8 | ------ | ●° d° a. |
| 28 | 32.3 | 19.5 | 92 | 47 | 9 | 3 | ------ |  |
| Mean | 30.3 | 19.8 | 86.9 | 60.1 | 6.1 | 6.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 17.7 |  |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.5 | 19 | 98 | 64 | 1 | 2 | ------ | ≡ Ω a. ↯° p. |
| 2 | 31 | 19.9 | 95 | 68 | 6 | 3 | ------ | ≡° a. |
| 3 | 21.5 | 20.8 | 96 | 63 | 4 | 8 | ------ | ≡° a. |
| 4 | 31.6 | 18.8 | 97 | 61 | 4 | 9 | ------ | ≡ a. ↯ d p. |
| 5 | 30.5 | 20.9 | 82 | 75 | 8 | 10 | 0.3 | d° p. |
| 6 | 30 | 22.8 | 80 | 72 | 10 | 10 | ------ | d° p. |
| 7 | 33.1 | 22.5 | 62 | 53 | 10 | 10 | ------ |  |
| 8 | 32.1 | 23.3 | 63 | 51 | 10 | 10 | ------ | ⌣ ⊖° p. |
| 9 | 33 | 22.8 | 60 | 52 | 10 | 5 | ------ |  |
| 10 | 32.8 | 19.1 | 78 | 51 | 4 | 4 | ------ | ⌣ p. |
| 11 | 31.5 | 18.1 | 86 | 54 | 3 | 8 | 3.2 | ⌒ ●° p. |
| 12 | 33 | 22.5 | 84 | 59. | 10 | 10 | ------ | d a. |
| 13 | 32.7 | 23.6 | 63 | 50 | 10 | 10 | ------ |  |
| 14 | 31.5 | 17.5 | 90 | 58 | 4 | 5 | ------ | ⌣° p. |
| 15 | 31 | 18.2 | 94 | 62 | 6 | 8 | ------ | ○ ⌣ p. |
| 16 | 31 | 19 | 91 | 59 | 6 | 4 | ------ |  |
| 17 | 30.9 | 19 | 95 | 60 | 4 | 8 | ------ | ≡° a. |
| 18 | 31.4 | 19.8 | 94 | 67 | 6 | 8 | ------ | d p. |
| 19 | 33 | 22.8 | 72 | 63 | 5 | 8 | ------ | d p. |
| 20 | 32.4 | 22.8 | 70 | 52 | 10 | 4 | ------ |  |
| 21 | 31.1 | 18 | 87 | 56 | 9 | 8 | ------ | d p. |
| 22 | 31 | 20.5 | 74 | 54 | 4 | 2 | ------ |  |
| 23 | 32 | 18.1 | 97 | 56 | 2 | 4 | ------ | ≡ a. |
| 24 | 30.3 | 16.5 | 94 | 58 | 1 | 2 | ------ | ≡° a. |
| 25 | 30.1 | 16.5 | 97 | 67 | 2 | 9 | .5 | ≡ a. d p. |
| 26 | 28.6 | 21.8 | 97 | 84 | 10 | 10 | ------ |  |
| 27 | 30.4 | 21 | 93 | 61 | 10 | 6 | ------ | d° a. |
| 28 | 30.4 | 18.4 | 97 | 61 | 5 | 2 | ------ | ≡ a. |
| Mean | 31.4 | 20.1 | 85.2 | 60.4 | 6.2 | 6.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 4 |  |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 34.6 | 20.2 | 96 | 47 | 4 | 2 | ------ | Ω a. |
| 2 | 35 | 22.5 | 94 | 44 | 4 | 4 | ------ | Ω a. ⊤ p. |
| 3 | 35 | 21.4 | 97 | 47 | 4 | 2 | ------ | Ω a. |
| 4 | 34.8 | 20.6 | 94 | 45 | 8 | 8 | 25.4 | Ω a. ● p. |
| 5 | 31 | 21.6 | 96 | 63 | 9 | 7 | ------ | Ω ≡° a. d° p. |
| 6 | 32 | 21.8 | 91 | 60 | 8 | 4 | ------ | Ω a. |
| 7 | 32.1 | 20.8 | 78 | 46 | 9 | 9 | ------ | Ω a. |
| 8 | 32.3 | 22.2 | 78 | 63 | 10 | 10 | ------ | Ω a. |
| 9 | 32.4 | 21.8 | 71 | 75 | 10 | 10 | ------ | Ω a. |
| 10 | 33.5 | 19.8 | 90 | 47 | 4 | 4 | ------ | Ω a. |
| 11 | 34 | 18.8 | 88 | 52 | 2 | 2 | 3.8 | Ω a. ● p. |
| 12 | 30 | 21.6 | 87 | 71 | 4 | 4 | ------ | Ω a. |
| 13 | 31.6 | 22.4 | 82 | 50 | 3 | 4 | ------ | Ω a. |
| 14 | 34 | 18 | 91 | 48 | 4 | 4 | ------ | Ω a. |
| 15 | 34.6 | 19.4 | 93 | 45 | 3 | 9 | ------ | Ω a. |
| 16 | 35 | 20.2 | 87 | 43 | 3 | 4 | ------ | Ω a. |
| 17 | 34.3 | 19.8 | 94 | 50 | 3 | 9 | ------ | Ω a. d° p. |
| 18 | 35.4 | 20.6 | 94 | 48 | 4 | 9 | ------ | Ω a. |
| 19 | 32.4 | 22.3 | 70 | 49 | 7 | 8 | ------ | Ω a. |
| 20 | 31.5 | 21.4 | 70 | 46 | 7 | 9 | ------ |  |
| 21 | 32.8 | 19.7 | 92 | 47 | 7 | 9 | ------ | Ω a. |
| 22 | 35 | 17.7 | 95 | 38 | 2 | 4 | ------ | Ω a. |
| 23 | 33.6 | 20.4 | 88 | 39 | 4 | 3 | ------ | Ω a. |
| 24 | 34 | 17.7 | 90 | 38 | 3 | 3 | ------ | Ω a. |
| 25 | 33.5 | 18.9 | 88 | 41 | 3 | 9 | 1 | Ω a. ● p. |
| 26 | 31 | 22.5 | 86 | 66 | 10 | 9 | ------ |  |
| 27 | 32.6 | 22.9 | 82 | 58 | 10 | 10 | ------ |  |
| 28 | 34.4 | 18.6 | 89 | 45 | 8 | 7 | ------ | Ω a. |
| Mean | 33.3 | 20.6 | 87.5 | 50.4 | 5.6 | 6.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 30.2 |  |

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 33 | 21.2 | 93 | 70 | 2 | 1 | ------ | Ω° a. |
| 2 | 30.9 | 22 | 96 | 73 | 3 | 2 | ------ | ≡° a. |
| 3 | 30.5 | 19.9 | 94 | 74 | 1 | 1 | ------ | Ω° a. |
| 4 | 30.2 | 20.3 | 85 | 74 | 1 | 1 | ------ | Ω° a. |
| 5 | 30.2 | 21.7 | 96 | 75 | 1 | 2 | ------ | ≡° a. |
| 6 | 29 | 22.9 | 81 | 72 | 6 | 10 | ------ | ⊖² p. |
| 7 | 30.1 | 22.3 | 95 | 77 | 7 | 6 | ------ |  |
| 8 | 30.6 | 22.7 | 87 | 76 | 10 | 3 | ------ |  |
| 9 | 30.3 | 19.2 | 91 | 75 | 2 | 1 | ------ | Ω° a. |
| 10 | 31.2 | 18.8 | 92 | 73 | 1 | 1 | ------ | Ω° a. |
| 11 | 30.4 | 19 | 90 | 74 | 1 | 6 | 1.5 | ⌒² ●° p. |
| 12 | 29.4 | 22.7 | 88 | 79 | 10 | 10 | .5 | ⌒² ●° p. |
| 13 | 30.8 | 21 | 89 | 70 | 10 | 2 | ------ |  |
| 14 | 30.4 | 19.3 | 92 | 71 | 1 | 1 | ------ | Ω° a. |
| 15 | 30 | 19.4 | 87 | 72 | 3 | 2 | ------ |  |
| 16 | 30.1 | 21 | 85 | 72 | 9 | 1 | ------ |  |
| 17 | 31.1 | 21 | 84 | 72 | 1 | 1 | ------ | Ω° a. |
| 18 | 31.2 | 21.3 | 83 | 72 | 1 | 1 | ------ | Ω° a. |
| 19 | 31.8 | 21.3 | 96 | 70 | 2 | 1 | ------ | Ω° a. |
| 20 | 30 | 20.3 | 85 | 75 | 5 | 1 | ------ |  |
| 21 | 30.2 | 20.3 | 85 | 58 | 1 | 2 | ------ | Ω° a. |
| 22 | 30.1 | 19.9 | 94 | 61 | 1 | 2 | ------ | Ω° a. |
| 23 | 29.7 | 18 | 89 | 69 | 1 | 1 | ------ | Ω° a. |
| 24 | 29.8 | 17.4 | 88 | 60 | 1 | 1 | ------ | Ω° a. |
| 25 | 29.5 | 18.9 | 89 | 62 | 1 | 1 | ------ | Ω° a. |
| 26 | 29.4 | 20 | 89 | 76 | 10 | 10 | ------ |  |
| 27 | 29.4 | 21.4 | 91 | 75 | 10 | 6 | ------ | d° a. p. |
| 28 | 30 | 21.4 | 86 | 62 | 7 | 1 | ------ |  |
| Mean | 30.3 | 20.5 | 89.3 | 71 | 3.9 | 2.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 2 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 32.4 | 18.5 | 98 | 55 | 4 | 2 | ------ | ⌓ ≡ a. |
| 2 | 31.8 | 20.6 | 97 | 59 | 10 | 2 | ------ | ⌓° a. |
| 3 | 30.2 | 22 | 97 | 64 | 10 | 2 | ------ | ⌓° a. |
| 4 | 26.3 | 21 | 97 | 80 | 10 | 10 | 1.3 | d² p. |
| 5 | 27.5 | 20 | 98 | 71 | 10 | 10 | 4.6 | d a. d² p. |
| 6 | 25.5 | 19.9 | 99 | 79 | 10 | 10 | 5.1 | d° a. ●° p. |
| 7 | 24.3 | 19.3 | ------ | 77 | ------ | 10 | 8.4 | d² p. |
| 8 | 26.6 | 19 | 99 | 75 | 10 | 10 | 1.3 | d² a. d° p. |
| 9 | 27.1 | 18.6 | 99 | 69 | 10 | 9 | .3 | ≡² d² a. d° ⌽² p. |
| 10 | 27.3 | 17.8 | 99 | 67 | 9 | 10 | ------ | ⌓² ≡² d° ⊕° ⌈↯ ⌽² |
| 11 | 23.6 | 19.4 | 98 | 93 | 10 | 10 | 8.6 | ⌓² ≡° a. d² a. p. |
| 12 | 25.9 | 20.6 | 99 | 79 | 9 | 10 | 4.4 | d² a. ⊕° ⌽° p. |
| 13 | 28.5 | 18.5 | 99 | 58 | 10 | 4 | ------ | d a. ⌽° p. |
| 14 | 28.6 | 20 | 98 | 63 | 10 | 5 | ------ | ⌓ d° a. |
| 15 | 30.3 | 20.2 | 97 | 58 | 8 | 6 | ------ | ⌓° ⊕° C² a. p. |
| 16 | 26.3 | 19.5 | 98 | 73 | 10 | 10 | 2.3 | ⌓° d° a. d² p. |
| 17 | 26.2 | 20.2 | 99 | 87 | 10 | 10 | 9.9 | d² a. p d² p. |
| 18 | 25.9 | 20 | 98 | 81 | 10 | 10 | 3.8 | d² a. p. |
| 19 | 23.8 | 18.8 | 98 | 79 | 10 | 10 | 11.4 | d² a. p. |
| 20 | 22.6 | 17.8 | 98 | 89 | 10 | 10 | 6.1 | d² a. d p. |
| 21 | 25 | 18.7 | ------ | 82 | ------ | 10 | 2.6 | d² a. d p. |
| 22 | 27.9 | 16.8 | 99 | 63 | 5 | 6 | ------ | ≡ a. |
| 23 | 28.3 | 17.4 | 97 | 61 | 10 | 8 | 2 | ⌓² d² a. |
| 24 | 27.3 | 18.2 | 98 | 70 | 10 | 9 | 1.3 | ⌓² a. ●° p. |
| 25 | 26.2 | 19.3 | 98 | 75 | 10 | 10 | 3.6 | d² a. d° p. |
| 26 | 26.5 | 20 | 99 | 71 | 10 | 10 | 1.5 | d° a. ⊕° d² p. |
| 27 | 28.4 | 20.1 | 98 | 62 | 10 | 9 | ------ | |
| 28 | 30.2 | 20 | 99 | 59 | 10 | 3 | 1.3 | ⌓° a. d² p. |
| Mean | 27.2 | 19.4 | 98.2 | 71.4 | 9.4 | 8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 79.8 | |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 30.1 | 21.5 | 81 | 64 | 0 | 0 | ------ | ⌓² a. |
| 2 | 30.4 | 22.8 | 83 | 54 | 0 | 3 | ------ | ⌓² a. ⊕ a. p. |
| 3 | 29.5 | 20.6 | 79 | 64 | 1 | 0 | ------ | ⌓² a. |
| 4 | 29.6 | 21.1 | 76 | 57 | 0 | 1 | ------ | ⌓² a. |
| 5 | 29.7 | 22 | 65 | 56 | 0 | 3 | ------ | ⌓² a. |
| 6 | 30.5 | 23.5 | 70 | 59 | 8 | 9 | ------ | ⌓° a. |
| 7 | 28.8 | 22.2 | 60 | 53 | 10 | 9 | ------ | |
| 8 | 30.4 | 22 | 69 | 49 | 6 | 1 | ------ | ⌓° a. |
| 9 | 30.2 | 21.7 | 71 | 47 | 1 | 4 | ------ | ⌓² a. |
| 10 | 31.2 | 20.7 | 64 | 37 | 0 | 2 | ------ | ⌽ p. |
| 11 | 31.7 | 21.4 | 64 | 55 | 2 | 8 | 1 | ⌓ a. p p. |
| 12 | 29.5 | 24.4 | 70 | 61 | 10 | 9 | ------ | ⌓° a. d p. |
| 13 | 29.7 | 23.6 | 58 | 58 | 10 | 5 | ------ | ⌓° a. |
| 14 | 29.6 | 21.9 | 69 | 59 | 0 | 1 | ------ | ⌓° a. ⌽ p. |
| 15 | 29.7 | 21 | 75 | 54 | 0 | 4 | ------ | ⌓² a. |
| 16 | 30.5 | 22.6 | 62 | 54 | 8 | 1 | ------ | ⌓° a. |
| 17 | 30.7 | 21.5 | 70 | 55 | 2 | 3 | ------ | ⌓° a. d° p |
| 18 | 32.2 | 24.1 | 59 | 56 | 4 | 6 | ------ | ⌓° a. |
| 19 | 31.7 | 23 | 56 | 35 | 0 | 1 | ------ | ↙° p. |
| 20 | 31.6 | 21.4 | 52 | 35 | 2 | 3 | ------ | |
| 21 | 30.7 | 22 | 63 | 52 | 4 | 5 | ------ | ⌓² a. |
| 22 | 29.3 | 22 | 62 | 48 | 2 | 0 | ------ | ⌓ a. |
| 23 | 29.4 | 20.2 | 74 | 50 | 0 | 0 | ------ | ⌓² a. |
| 24 | 29.2 | 20.1 | 65 | 56 | 0 | 1 | ------ | ⌓² a. |
| 25 | 29.2 | 20.2 | 68 | 57 | 0 | 2 | ------ | ⌓² a. |
| 26 | 27.5 | 22 | 76 | 63 | 10 | 4 | ------ | |
| 27 | 26.9 | 22.5 | 91 | 67 | 10 | 8 | ------ | |
| 28 | 27.5 | 22.4 | 81 | 63 | 10 | 0 | 4.8 | ● a. |
| Mean | 29.9 | 21.9 | 69 | 54.2 | 3.6 | 3.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 5.8 | |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 32.2 | 20.9 | 96 | 61 | 0 | 6 | ------ | ⌓² ≡° a. |
| 2 | 31.9 | 21.2 | 95 | 57 | 0 | 7 | ------ | ⌓² ≡° a. |
| 3 | 31.4 | 19.6 | 91 | 61 | 0 | 4 | ------ | ⌓² a. |
| 4 | 31.2 | 21 | 79 | 55 | 1 | 2 | ------ | |
| 5 | 32.8 | 16.9 | 90 | 45 | 0 | 2 | ------ | ⌓² a. |
| 6 | 32.7 | 21.7 | 74 | 45 | 8 | 3 | ------ | |
| 7 | 33.4 | 20.5 | 79 | 39 | 8 | 4 | ------ | |
| 8 | 33.4 | 19.5 | 82 | 48 | 1 | 4 | ------ | |
| 9 | 32.3 | 17.3 | 86 | 40 | 0 | 2 | ------ | ⌓° a. |
| 10 | 33.3 | 17.1 | 77 | 34 | 0 | 3 | ------ | |
| 11 | 30.8 | 17.9 | 92 | 55 | 0 | 8 | ------ | d° p. |
| 12 | 33.3 | 22.9 | 72 | 44 | 8 | 10 | ------ | |
| 13 | 33 | 21.5 | 71 | 38 | 8 | 6 | ------ | |
| 14 | 32.4 | 18 | 82 | 53 | 0 | 3 | ------ | |
| 15 | 32.2 | 17.9 | 93 | 46 | 0 | 4 | ------ | ⌓ a. |
| 16 | 32.8 | 21.5 | 66 | 45 | 0 | 2 | ------ | |
| 17 | 32.7 | 22.9 | 72 | 44 | 0 | 3 | ------ | |
| 18 | 30.2 | 21.6 | 75 | 49 | 9 | 7 | ------ | |
| 19 | 30.3 | 22.5 | 57 | 40 | 8 | 3 | ------ | |
| 20 | 31 | 15.9 | 80 | 38 | 0 | 1 | ------ | |
| 21 | 32.9 | 19.9 | 73 | 39 | 0 | 3 | ------ | |
| 22 | 31 | 16.4 | 87 | 45 | 0 | 2 | ------ | |
| 23 | 30.8 | 18.6 | 86 | 39 | 0 | 1 | ------ | |
| 24 | 30.7 | 20.3 | 76 | 49 | 0 | 1 | ------ | |
| 25 | 31.4 | 20.5 | 77 | 46 | 0 | 1 | ------ | |
| 26 | 30 | 21.6 | 79 | 57 | 8 | 9 | ------ | |
| 27 | 29.2 | 17.7 | 90 | 62 | 2 | 3 | ------ | ⌓° a. |
| 28 | 28 | ------ | 81 | 63 | 8 | 4 | ------ | ⌓ a. |
| Mean | 31.7 | 19.8 | 80.6 | 47.8 | 2.5 | 3.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### SANTO DOMINGO.

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 28.5 | 21.6 | 91 | 77 | 8 | 8 | ------ | ⌓ p. |
| 2 | 26.5 | 22.8 | 92 | 76 | 8 | 10 | 14.2 | ● a. ●° p. |
| 3 | 23.9 | 22,2 | 82 | 78 | 10 | 9 | 1.7 | d° p. |
| 4 | 23 | 19.9 | 78 | 78 | 10 | 10 | 7.8 | ●° d a. d° ● p. |
| 5 | 24.2 | 19.4 | 78 | 68 | 8 | 3 | .5 | d² ⌒ a. |
| 6 | 23.6 | 19.7 | 72 | 63 | 8 | 9 | ------ | |
| 7 | 25.3 | 20.6 | 72 | 57 | 8 | 1 | ------ | |
| 8 | 25.3 | 21 | 80 | 72 | 7 | 4 | ------ | |
| 9 | 24.6 | 20.3 | 78 | 81 | 7 | 7 | .2 | d° a. |
| 10 | 26.2 | 20.3 | 80 | 69 | 4 | 3 | ------ | d° a. |
| 11 | 26.8 | 20.8 | 80 | 64 | 3 | 2 | ------ | |
| 12 | 25.8 | 21.5 | 79 | 65 | 8 | 4 | ------ | |
| 13 | 25 | 21.1 | 65 | 63 | 8 | 4 | ------ | |
| 14 | 25.9 | 20.2 | 76 | 70 | 1 | 3 | ------ | ⌓ p. |
| 15 | 25.9 | 18.9 | 77 | 69 | 7 | 3 | 1.4 | |
| 16 | 23.2 | 19.8 | 79 | 72 | 8 | 9 | 2.3 | ● a. ↙° p. |
| 17 | 23.3 | 19.2 | 81 | 74 | 8 | 7 | ------ | ● d° a. |
| 18 | 24.1 | 20.2 | 70 | 64 | 10 | 8 | 2 | ↙° a. ● p. |
| 19 | 22.7 | 18.3 | 67 | 70 | 8 | 9 | ------ | d° a. p. |
| 20 | 24.1 | 18.6 | 69 | 57 | 7 | 3 | ------ | |
| 21 | 24.4 | 19.3 | 71 | 67 | 1 | 5 | ------ | ⌓ p. |
| 22 | 25.4 | 18 | 77 | 68 | 3 | 5 | ------ | |
| 23 | 24.2 | 20.2 | 79 | 74 | 3 | 8 | 2.5 | ↙° ● d a. ↙° p p. |
| 24 | 21.8 | 18.5 | 83 | 75 | 10 | 10 | 7.5 | d a. ↙° a. p. ● p. |
| 25 | 23.1 | 17.7 | 86 | 73 | 7 | 7 | 1 | d ⌒² ●° a. |
| 26 | 24.3 | 20.3 | 82 | 76 | 6 | 7 | 2.3 | d° ●° p. |
| 27 | 24.2 | 19.3 | 87 | 83 | 7 | 8 | 1 | ⌒° a. d° a. p. |
| 28 | 24.4 | 20.3 | 92 | 89 | 7 | 10 | .8 | d a. p. ⌓² p. |
| Mean | 24.6 | 20 | 78.5 | 71.1 | 6.8 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 45.2 | |

# SEISMOLOGICAL BULLETIN FOR FEBRUARY, 1911.

By Rev. Miguel Saderra Masó, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, 6$^h$ 42$^m$. **Aparri** (NE of Luzon). Oscillatory earthquake; direction E–W, intensity III, duration 5 seconds.

2, 8$^h$ 40$^m$. **Sarangani** (S of Mindanao). Earthquake shock of intensity III.

3, 20$^h$ 30$^m$. **Sumay** (Guam, Mariana Islands). Earthquake shocks of intensity III. Repeated with the same intensity on the 4th at 4$^h$ 00$^m$.

6, 3$^h$ 55$^m$. **Butuan** (N of Mindanao). Oscillatory earthquake; direction ESE–WNW, intensity III.

6, 14$^h$ 30$^m$. **Santo Domingo** (Batanes Islands). Oscillatory earthquake; direction SW–NE; intensity III: subterranean rumbling.

7, 2$^h$ 10$^m$. **Nueva Caceres** (SE of Luzon). Earthquake of intensity II.

9, 13$^h$ 3$^m$. **Iloilo** (SE of Panay). Earthquake of intensity III and long duration.

13, 11$^h$ 00$^m$. **Sarangani** (S of Mindanao). Earthquake shocks of intensity IV.

16, 9$^h$ 45$^m$. **Damaguete** (SE of Negros). Oscillatory earthquake of intensity II, duration 3 seconds.

17, 10$^h$ 00$^m$. **Sarangani** (S of Mindanao). Earthquake shocks of intensity III.

24, 8$^h$ 40$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV. Slight aftershocks at 8$^h$ 43$^m$ and 8$^h$ 48$^m$.

25, 20$^h$ 54$^m$. **Butuan** (N of Mindanao). Earthquake of intensity IV. Vertical shocks were distinctly felt, accompanied by subterranean rumblings proceeding from SSW.

26, 9$^h$ 20$^m$. **Sarangani** (S of Mindanao). Earthquake shock of intensity III.

NOTE.—The preceding list of earthquakes does not contain those originated in the Taal Volcano and felt in south and southwestern Luzon and northern Mindoro. A complete list of such earthquakes will be found in the Report of the eruption which occurred on the 30th of January.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwhich.

## RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight=$0^h$.]

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 17 | 14 | $I_d$ | V. | ---------- | ---------- | 10 42 48 | 10 43 09 | 0.05 | 2.4 | 10 45 | Vertical Component 0.01 mm. |
| 18 | 15 | $II_v$ | V. | 18 04 03 | ---------- | 18 04 14 | 18 05 27 | 1.50 | 2.4 | 18 17 | V. C. 1.30 mm. Earthquake, IV south Luzon and north Mindoro. |
| | | | H. NNW | 18 04 03 | ---------- | 18 04 15 | 18 04 48 | 2.69 | 8.1 | 18 20 | |
| | | | H. WSW | 18 04 03 | ---------- | 18 04 15 | 18 05 13 | 3.80 | 8·4 | 18 25 | |
| 19 | 15 | $I_d$ | V. | ---------- | ---------- | 17 28 39 | ---------- | ------ | ----- | 17 32 | V. C. 0.01 mm. |
| 20 | 15 | $I_d$ | V. | 21 33 10 | ---------- | 21 33 19 | 21 33 58 | .16 | 2.4 | 21 35 | V. C. 0.13 mm. |
| 21 | 18 | $I_d$ | V. | ---------- | ---------- | 1 37 54 | 1 37 56 | .05 | 2.4 | 1 40 | V. C. 0.01 mm. |
| 22 | 18 | $I_d$ | V. | 11 34 18 | ---------- | 11 34 44 | 11 35 01 | .53 | 2.4 | 11 37 | V. C. 0.05 mm. |
| 23 | 19 | $I_d$ | V. | ---------- | ---------- | 1 23 43 | 1 23 52 | .02 | 2.4 | 1 26 | V. C. 0.01 mm. |
| 24 | 19 | $II_r$ | V. | 2 50 38 | 2 57 07 | 3 05 04 | 3 14 52 | .04 | 11.6 | 3 58 | Eqke. at Lahore (British India). |
| | | | H. NNW | 2 50 38 | 2 57 00 | 3 05 00 | 3 14 53 | .37 | 13.2 | 4 00 | |
| | | | H. WSW | 2 50 38 | 2 56 55 | 3 05 07 | 3 15 21 | .48 | 11.4 | 4 14 | |
| 25 | 20 | $I_v$ | V. | 13 45 30 | ---------- | 13 45 40 | 13 46 04 | .44 | 2.4 | 13 54 | V. C. 0.22 mm. |
| 26 | 20 | $I_d$ | V. | ---------- | ---------- | 20 15 08 | ---------- | ------ | ----- | 20 17 | V. C. 0.01 mm. |
| 27 | 21 | $I_d$ | V. | ---------- | ---------- | 0 22 07 | 0 22 09 | .03 | 2.4 | 0 24 | V. C. 0.01 mm. |
| 28 | 21 | $II_d$ | V. | 4 32 11 | ---------- | 4 32 20 | 4 32 58 | 1.68 | 2.4 | 4 39 | V. C. 0.81 mm. |
| 29 | 21 | $I_d$ | V. | 17 29 46 | ---------- | 17 30 00 | 17 30 18 | .25 | 2.4 | 17 36 | V. C. 0.13 mm. |
| 30 | 22 | $I_d$ | V. | ---------- | ---------- | 5 16 19 | 5 16 22 | .03 | 2.4 | 5 18 | V. C. 0.01 mm. |
| 31 | 23 | $I_d$ | V. | 8 39 01 | ---------- | 8 39 13 | 8 39 21 | .07 | 2.4 | 8 42 | V. C. 0.04 mm. |
| 32 | 23 | $I_d$ | V. | 9 24 43 | ---------- | 9 24 52 | 9 25 15 | .04 | 2.4 | 9 27 | V. C. 0.02 mm. |
| 33 | 23 | $II_r$ | V. | 19 17 21 | 19 22 34 | 19 29 16 | 19 38 01 | .03 | 8.8 | 20 48 | |
| | | | H. NNW | 19 17 24 | 19 22 18 | 19 28 58 | 19 37 56 | .69 | 9 | 20 48 | |
| | | | H. WSW | 19 27 24 | 19 22 10 | 19 28 49 | 19 38 03 | 1.23 | 8.4 | 21 11 | |
| 34 | 25 | I | V. | ---------- | ---------- | 8 56 26 | ---------- | ------ | ----- | 9 42 | |
| | | | H. WSW | ---------- | ---------- | 8 56 26 | ---------- | ------ | ----- | 9 27 | |
| 35 | 25 | $I_v$ | V. | 22 05 28 | ---------- | 22 05 38 | 22 05 49 | .06 | 2.4 | 22 09 | V. C. 0.01 mm. |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds., Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW-SSE pendulum, T=8 seconds; WSW-ENE pendulum, T=8.6 seconds. Magnification of the record: NNW-SSE, 15 times; WSW-ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E-W direction, at a distance of 1.5 kilometers to the north of the Observatory.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, $6^h$ $42^m$. **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E–W, intensidad III, duración 5 segundos.

2, $8^h$ $40^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

3, $20^h$ $30^m$. **Sumay** (Guam, Islas Marianas). Temblor de tierra de intensidad III. Repitió con la misma intensidad el día 4, á $4^h$ $00^m$.

6, $3^h$ $55^m$. **Butúan** (N de Mindanao). Temblor oscilatorio, dirección ESE–WNW, intensidad III.

6, $14^h$ $30^m$. **Santo Domingo** (Islas Batanes). Temblor oscilatorio, dirección SW–NE, intensidad III: acompañado de ruido subterráneo.

7, $2^h$ $10^m$. **Nueva Cáceres** (SE de Luzón). Temblor de tierra de intensidad II.

9, $13^h$ $3^m$. **Iloílo** (SE de Panay). Temblor de tierra de intensidad III, duración larga.

13, $11^h$ $00^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

16, $9^h$ $45^m$. **Dumaguete** (SE de Negros). Temblor oscilatorio de intensidad II, duración 3 segundos.

17, $10^h$ $00^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

24, $8^h$ $40^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV. Repitió á $8^h$ $43^m$ y $8^h$ $48^m$.

25, $20^h$ $54^m$. **Butúan** (N de Mindanao). Temblor de intensidad IV: notáronse sacudidas verticales, acompañadas de ruido subterráneo procedente al parecer del SSW.

26, $9^h$ $20^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

NOTA.—En la lista precedente no figuran los temblores de tierra sentidos en la parte S y SW de Luzón y N de Mindoro originados en el Volcán Taal: se dá cuenta de ellos en la lista de temblores que acompaña al report sobre la erupción de dicho volcán, que tuvo lugar el 30 de Enero.

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[1] La intensidad de los terromotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

# BULLETIN FOR MARCH, 1911.

# METEOROLOGICAL BULLETIN FOR MARCH, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The mean atmospheric pressure of this month exceeded that for March, 1910, throughout the Philippines. The highest pressures were observed everywhere on the 27th, and the lowest generally on the 10th and 11th in the Visayas, Mindanao, and southern Luzon, but on the 15th in the central and northern parts of the latter island.

The mean monthly temperature was almost the same as for March of the preceding year in southern Luzon, the Visayas, and Mindanao, while it was slightly lower in central and northern Luzon. For Manila, the extremes were 34.7° C. and 16.2° C.; the former having been registered on the 16th, the latter on the 9th and 10th.

### PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR MARCH, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from March, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from March, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Surigao | 759.65 | +0.79 | 760.95 | 27 | 758.05 | 10 | 25.7 | —0.1 | 31.4 | 17 | 19.1 | 6 |
| Cebu | 59.54 | + .74 | 61 | 27 | 58.22 | 10 | 26.4 | 0 | 31.5 | 2, 29, 30 | 19.1 | 9 |
| Iloilo | 59.62 | + .64 | 61.18 | 27 | 58.40 | 11 | 26.5 | — .1 | 34 | 16 | 19.5 | 7 |
| Ormoc | 59.75 | + .76 | 61.20 | 27 | 58.40 | 10 | 25.1 | 0 | 33 | 19 | 16.2 | 6 |
| Tacloban | 60.39 | +1.07 | 62.12 | 27 | 58.93 | 10 | 26.1 | + .2 | 33.5 | 20 | 19.8 | 6 |
| Capiz | 60.20 | ---------- | 61.90 | 27 | 58.79 | 11 | 26.4 | ---------- | 33.3 | 12 | 19.5 | 7 |
| Calbayog | 60.09 | + .96 | 61.81 | 27 | 58.39 | 11 | 25.1 | — .1 | 34.1 | 21 | 17.7 | 6 |
| Legaspi | 60.37 | + .93 | 62.14 | 27 | 58.59 | 11 | 26.3 | 0 | 33.5 | 23 | 18.1 | 6 |
| Atimonan | 60.72 | +1.04 | 62.77 | 27 | 59.31 | 16 | 26.1 | — .3 | 31 | 25 | 18.4 | 8 |
| Paracale | 60.80 | ---------- | 63.04 | 27 | 59.46 | 10, 18 | 25.5 | ---------- | 31.7 | 19, 24 | 18.5 | 9 |
| Manila | 60.48 | + .97 | 62.54 | 27 | 58.89 | 15 | 25.5 | — .7 | 34.7 | 16 | 16.2 | 9, 10 |
| San Isidro | 60.33 | + .85 | 62.36 | 27 | 58.70 | 15 | 25.8 | — .6 | 35.4 | 17 | 17 | 9 |
| Dagupan | 60.04 | + .75 | 62.10 | 27 | 58.42 | 15 | 26.6 | — .2 | 36.6 | 13, 30, 31 | 19 | 9 |
| Bolinao | 59.99 | ---------- | 62 | 27 | 58.50 | 15 | 26.5 | ---------- | 35.9 | 12 | 19.9 | 3, 10 |
| Baguio[1] | 637.37 | + .48 | 639.05 | 27 | 636.14 | 10 | 17.3 | — .3 | 25.7 | 16 | 11.1 | 10 |
| Vigan | 760.05 | + .61 | 762.04 | 27 | 758.62 | 15 | 26.4 | — .4 | 33.6 | 26, 30 | 16 | 2 |
| Tuguegarao | 60.96 | + .69 | 63.94 | 27 | 58.63 | 16 | 25.6 | — .4 | 37.1 | 16 | 18 | 2, 10 |
| Aparri | 61.47 | + .74 | 64.28 | 27 | 59.12 | 15 | 24.5 | — .3 | 32.3 | 13 | 18.8 | 4 |

[1] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—A few stations excepted, the monthly rainfall was less than during the corresponding month of last year. The total amount collected in the rain gauges of the Central Observatory was only 10 millimeters, which is 8.8 millimeters below the normal rainfall for March.

### RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MARCH, 1911.

| Station. | Total. | Departure from March, 1910. | Rainy days. | Departure from March, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from March, 1910. | Rainy days. | Departure from March, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Isabela, Basilan | 0 | —130 | 0 | —11 | 0 | 0 | Virac | 187 | — 57.7 | 14 | —10 | 39.8 | 26 |
| Zamboanga | 2.5 | — 22.6 | 2 | — 1 | 2 | 19 | Nueva Caceres | 86.8 | — 59.5 | 12 | + 1 | 23.7 | 11 |
| Davao | 173.2 | 0 | 7 | — 2 | 53.3 | 2 | Batangas | 12.8 | + 5.9 | 4 | 0 | 5.6 | 20 |
| Cotabato | 97.1 | + 59.6 | 8 | + 1 | 43.2 | 27 | Atimonan | 122.2 | + 69.1 | 10 | 0 | 48 | 11 |
| Dapitan | 8.9 | | 7 | | 3.3 | 3 | Paracale | 551.5 | | 14 | | 233.5 | 11 |
| Butuan | 183 | + 59.8 | 15 | — 7 | 85.4 | 30 | Santa Cruz, Laguna | 80.7 | | 11 | | 26.9 | 20 |
| Dumaguete | 36.7 | | 6 | | 10.9 | 24 | Antipolo | 32.1 | | 6 | | 13.3 | 20 |
| Yap, Western Carolines | 334.9 | +184.8 | 26 | + 4 | 139.2 | 1 | Manila | 10 | — 6 | 4 | — 1 | 5.8 | 25 |
| Tagbilaran | 126.6 | + 32 | 4 | — 6 | 76.2 | 19 | Iba | 61.7 | — 54.2 | 6 | — 2 | 17.7 | 24 |
| Surigao | 430.3 | +184.6 | 16 | — 2 | 183.8 | 30 | San Isidro | 9.4 | — 29.2 | 6 | — 2 | 4.1 | 17 |
| Maasin | 140 | + 55.5 | 6 | — 1 | 47.2 | 31 | Tarlac | 15 | — 63.8 | 4 | — 3 | 9.1 | 24 |
| Cebu | 19 | — 79.5 | 7 | — 6 | 7.6 | 19 | Baler | 230.6 | | 12 | | 54.8 | 12 |
| Iloilo | 27.5 | + 11 | 4 | — 6 | 16.8 | 17 | Dagupan | 20.9 | — 89 | 4 | — 3 | 12.5 | 24 |
| San Jose Buenavista | 10.7 | — 32.6 | 4 | — 5 | 8.1 | 22 | Bolinao | 57 | | 5 | | 25.4 | 27 |
| Cuyo | 0 | | 0 | | 0 | 0 | Baguio | 1.5 | — 48 | 6 | — 8 | 34.5 | 28 |
| Ormoc | 76.5 | — 6.2 | 10 | — 7 | 34.8 | 20 | San Fernando, Union | 0 | — 38.7 | 0 | — 5 | 0 | 0 |
| Tacloban | 138.8 | — 79.8 | 18 | — 7 | 26 | 11, 28 | Echagüe[1] | 32.2 | | 7 | | 15.5 | 28 |
| Capiz | 5.5 | | 6 | | 2.3 | 11 | Candon | 25.6 | + 13.7 | 3 | + 1 | 24.6 | 25 |
| Borongan | 238.8 | —146.2 | 20 | — 7 | 35.6 | 10 | Vigan | 3.5 | — 7.4 | 2 | 0 | 2 | 25 |
| Calbayog | 104.7 | —240.5 | 11 | —10 | 28.4 | 25 | Tuguegarao | 49.8 | — 20.4 | 5 | — 1 | 25.9 | 28 |
| Masbate | 64.6 | — 80.6 | 8 | —10 | 27.2 | 11 | Laoag | 0 | — 8.1 | 0 | — 2 | 0 | 0 |
| Legaspi | 136.5 | —212.3 | 10 | — 9 | 46.2 | 11 | Aparri | 14.4 | — 56 | 7 | — 4 | 4.3 | 2 |
| Sumay, Guam | 167.8 | —212.5 | 20 | + 5 | 43.6 | 2 | Santo Domingo, Batanes Is. | 16 | — 143 | 6 | —14 | 5.1 | 28 |
| Calapan | 66.7 | —127.6 | 12 | — 5 | 19.3 | 26 | | | | | | | |

[1] 26 days of observation.

## DEPRESSIONS AND TYPHOONS.

Aside from the typhoon of the Carolines, which has already been mentioned in the Bulletin for February and will be discussed forthwith, there were only once some indications of an atmospheric disturbance in the Philippines. In the forenoon of March 10, the extraordinary fall of the barometer observed at 10 a. m. in the stations of the eastern Visayas, together with the winds which then prevailed in that region, caused us to announce a depression over the Pacific Ocean to the east of the Visayan Islands. But the afternoon observations of the same day, and still more those made in the morning of the following day soon allayed our anxiety, as they showed that the depression had filled up and, hence, there was no longer any danger for the Archipelago.

### THE TYPHOON OF THE WESTERN CAROLINES, FEBRUARY 26 TO MARCH 5, 1911.

It would seem that this typhoon existed as early as February 26th at a distance of more than 300 miles to the ESE of Yap. We believe that the observations made on board the German steamer *Coblenz,* en route from Australia to the Caroline and Philippine Islands, will be of interest to our readers.

### METEOROLOGICAL OBSERVATIONS MADE ON BOARD THE STEAMER "COBLENZ," FEBRUARY 26 TO MARCH 1, 1911.

[Captain, Mr. H. Reagener.]

| Date and hour. | Position. | | Pressure. | Wind. | | Remarks. |
|---|---|---|---|---|---|---|
| | Latitude N. | Longitude E. | | Direction. | Force. | |
| February 26: | ° | ° | *mm.* | | *0-12.* | |
| 8 a. m | 1.7 | 142.9 | 758.37 | WNW | 5 | Cloudy. |
| 4 p. m | 2.9 | 142.4 | 56.22 | WNW | 5 | Do. |
| Midnight | 4.1 | 141.6 | 58.75 | NW | 4 | Do. |
| February 27: | | | | | | |
| 8 a. m | 5.4 | 140.8 | 57.09 | WNW | 3-4 | Do. |
| Noon | 5.9 | 140.3 | 56.72 | WNW | 4 | Passing showers. |
| 4 p. m | 6.4 | 139.9 | 54.69 | WNW | 4-5 | Cloudy and passing showers. |
| 8 p. m | 6.9 | 139.5 | 55.73 | W | 3-5 | Do. |
| Midnight | 7.9 | 139.1 | 55.72 | W | 5 | Do. |

*Meteorological observations made on board the steamer "Coblenz," February 26 to March 1, 1911.*—Continued.

| Date and hour. | Position. |  | Pressure. | Wind. |  | Remarks. |
|---|---|---|---|---|---|---|
|  | Latitude N. | Longitude E. |  | Direction. | Force. |  |
| February 28: | ° | ° | *mm.* |  | *0-12.* |  |
| 4 a. m | 8.5 | 138.7 | 54.46 | w—wsw | 6 | Passing showers and thunder clouds. |
| 5 a. m | -------- | -------- | 53.94 | WSW | 6 | Intermittent rain and rough sea, with swell from WNW. Water over deck and hatches. |
| 6 a. m | -------- | -------- | 53.43 | WSW | 6 |  |
| 8 a. m | -------- | -------- | 52.21 | WSW | 7-8 | Roughness of sea increasing. Much water going over deck and hatches. |
| 10 a. m | -------- | -------- | 51.92 | W | 8 | Heavy high sea. Ship plunging violently and taking much water fore and aft. |
| 11 a. m | -------- | -------- | 51.91 | NW | 8-9 |  |
| Noon | 9.6 | 137.8 | 51.17 | N | 8-10 | Continual heavy rain. Ship laboring heavily and taking much water over. |
| 2 p. m | -------- | -------- | 49.93 | N | 9 |  |
| 3 p. m | -------- | -------- | 49.78 | N | 10 | Slightly clearing. |
| 4 p. m | -------- | -------- | 50.26 | N | 11 | Made now and then some progress despite the storm. |
| 5 p. m | -------- | -------- | 51.23 | N | 10 | Heavy squalls with rain. |
| 6 p. m | -------- | -------- | 52.23 | N | 9-10 | High seas and swell. At 6.30 p. m. Ship's position 8° 45′ lat. N. |
| 8 p. m | -------- | -------- | 53.61 | NbyW | 9 |  |
| 10 p. m | -------- | -------- | 54.96 | N | 8 | Heavy sea; but slightly decreasing. |
| Midnight | 9 | 137.4 | 55.91 | NNE | 7-8 | Violent rain squalls; sea and swell somewhat moderating. |
| March 1: |  |  |  |  |  |  |
| 4 a. m | 9.4 | 136.9 | 55.45 | NNE | 6 | Overcast. |
| Noon | 9.5 | 134.5 | 57.28 | NNW | 4 | Do. |
| 8 p. m | 10.1 | 133.1 | 57.52 | N | 4 | Cloudy. |
| Midnight | 10.3 | 132.3 | 57.69 | NbyE | 4 | Do. |

The fury of the storm prevented the *Coblenz* from making her usual call at the Island of Yap.

Not less interesting are the observations made at our station on the island mentioned from February 25 to March 3.

METEOROLOGICAL OBSERVATIONS AT YAP, WESTERN CAROLINES, FEBRUARY 25 TO MARCH 3, 1911.

| Date and hour. | Pressure. | Wind. |  | Clouds. |  |  |  | Sea. |  | Rainfall (daily total). | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  | Upper. |  | Lower. |  |  |  |  |  |
|  |  | Direction. | Force. | Form. | Direction. | Form. | Direction. | State. | Direction. |  |  |
| February 25: | *mm.* |  | *0-12.* |  |  |  |  |  |  | *mm.* |  |
| 6 a. m | 758.22 | Calm | ------ | Ci.-S. | -------- | S -Cu. | SE | S | -------- | ------- | Slight coloration of Ci. |
| 2 p. m | 56.77 | NNW | 1 | A.-Cu. | NNW | Cu. | NW | B | N | 0.5 | Slight drizzle and convergence of Ci. toward NE at sunset. |
| February 26: |  |  |  |  |  |  |  |  |  |  |  |
| 6 a. m | 55.37 | NNW | 1 | A.-Cu. | NNW | Cu. | NW | B | N | ------- | 4.40 a. m. Slight rain and bright solar halo late in the forenoon. |
| 2 p. m | 54.20 | WSW | 1 | Ci.-S. | -------- | Cu.-N. | WNW | T | -------- | 1.3 | Drizzle in the afternoon. |
| February 27: |  |  |  |  |  |  |  |  |  |  |  |
| 4 a. m | 51.95 | WNW | 4 | -------- | -------- | N. | -------- | ------ | -------- | ------- |  |
| 6 a. m | 52.26 | NW | 3 | Ci.-S. | -------- | N. | WNW | T | -------- | ------- |  |
| 10 a. m | 53.62 | WNW | 1 | -------- | -------- | Cu.-N. | WNW | C | NW | ------- | Drizzling slightly. |
| 2 p. m | 51.82 | NNW | 4 | -------- | -------- | Cu.-N.<br>Fr.-N. | WNW<br>N | L | NW | ------- | 5.20 p. m. Convergence of Ci. toward SE. |
| 6 p. m | 52.87 | NNW | 2 | -------- | -------- | Fr.-N. | N | L | N | ------- | 6.35 p. m. Slight coloration of Ci. |
| 10 p. m | 53.67 | NNW | 5 | -------- | -------- | N. | -------- | ------ | -------- | 6.1 | Drizzling slightly, vivid lightnings toward E quadrants: winds begin to freshen. |
| February 28: |  |  |  |  |  |  |  |  |  |  |  |
| 2 a. m | 53.07 | NW | 2 | -------- | -------- | N. | -------- | ------ | -------- | ------- | Drizzling slightly, vivid lightnings toward E quadrants. |
| 6 a. m | 52.52 | NNW | 5 | Ci.-S. | -------- | S.-Cu. | N | ------ | -------- | ------- | Do. |
| 8 a. m | 53.72 | N | 5 | -------- | -------- | N. | N | M | N | ------- | 8.30 a. m. Frequent drizzle begins. |
| 10 a. m | 52.07 | N | 8 | -------- | -------- | Fr.-N. | N | M | N | ------- | Fresh gale; at 10.21 a. m. Clear convergence of Ci. toward SE. |
| Noon | 52.52 | NNE | 9 | -------- | -------- | Fr.-N. | NNE | ------ | -------- | ------- | Strong gale blows down some cocoanut trees: winds veer to NE and E. |
| 2 p. m | 51.62 | N | 8 | -------- | -------- | Fr.-N. | NE | M | N | ------- | After 2 p. m. winds lulled remarkably and drizzle ceased. |
| 4 p. m | 51.85 | N | 1 | -------- | -------- | Fr.-N. | NE | M | N | ------- | Do. |
| 6 p. m | 52.97 | N | 2 | -------- | -------- | Fr.-N. | N | M | N | ------- | Winds and lower clouds back to N. |
| 8 p. m | 53.54 | N | 4 | -------- | -------- | Fr.-N. | N | ------ | -------- | ------- | Squalls with moderate breeze; vivid lightnings toward E quadrants. |
| 10 p. m | 54.68 | NNW | 6 | -------- | -------- | N. | -------- | ------ | -------- | 162.1 | Squalls with strong breeze; vivid lightnings toward E quadrants. |

*Meteorological observations at Yap, Western Carolines, February 25 to March 3, 1911.*—Continued.

| Date and hour | Pressure. | Wind. |  | Clouds. |  |  |  | Sea. |  | Rainfall (daily total). | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Direction. | Force. | Upper. |  | Lower. |  | State. | Direction. |  |  |
|  |  |  |  | Form. | Direction. | Form. | Direction. |  |  |  |  |
| March 1: | *mm.* |  | *0-12.* |  |  |  |  |  |  | *mm.* |  |
| 2 a. m | 53.45 | NNW | 4 | ------ | ------ | N. | ------ | ------ | ------ | ------ | Squalls with moderate breeze; vivid lightnings toward E quadrants. |
| 6 a. m | 53.39 | N | 3 | ------ | ------ | N. | N | ------ | ------ | ------ | Drizzling, at 7.10 a. m. thunders toward E. 7.30 a. m. squalls with moderate gale. |
| 2 p. m | 52.13 | NNW | 1 | ------ | ------ | N. | N | ------ | ------ | ------ | 2.30 p. m.; thunders toward SW and later toward NE. |
| 6 p. m | 51.79 | NNW | 4 | ------ | ------ | Fr.-N. | N | ------ | ------ | 139.2 | Squally. |
| March 2: |  |  |  |  |  |  |  |  |  |  |  |
| 2 a. m | 50.04 | NNW | 3 | ------ | ------ | N. | ------ | ------ | ------ | ------ | 1 a. m. Heavy squalls. |
| 6 a. m | 49.88 | W | 3 | ------ | ------ | N. | N | ------ | ------ | ------ | 5.30 a. m. Winds back to W with heavy squalls of force 8. |
| 10 a. m | 51.84 | W | 4 | ------ | ------ | Fr.-N. | WNW | ------ | ------ | ------ | Drizzling. |
| 2 p. m | 50.18 | W | 5 | ------ | ------ | Fr.-N. | WNW | ------ | ------ | ------ | Drizzling. 3.20 p. m. squalls of force 7. |
| 3 p. m | 49.69 | W | 5 | ------ | ------ | Fr.-N. | WNW | ------ | ------ | ------ | Drizzling. |
| 6 p. m | 51.26 | W | 5 | ------ | ------ | Fr.-N. | WNW | ------ | ------ | ------ |  |
| 10 p. m | 52.40 | W | 1 | ------ | ------ | Fr.-N. | ------ | ------ | ------ | 91.7 |  |
| March 3: |  |  |  |  |  |  |  |  |  |  |  |
| 6 a. m | 52.41 | NW | 2 | ------ | ------ | Fr.-N. | WNW | ------ | ------ | ------ | 10.40 a. m. Rain at intervals. |
| 2 p. m | 52.90 | W | 2 | ------ | ------ | Cu.-N. | ------ | ------ | ------ | ------ | 3.40 p. m. Rain. |
| 4 p. m | 52.70 | NW | 1 | ------ | ------ | N. | ------ | ------ | ------ | 18.3 | 6 p. m. Ci.-S. convergent toward N. |

It must, however, be borne in mind that on the 25th, 26th, and as late as the morning of the 27th of February the directions of the wind and clouds obeyed rather the influence of another depression, which during these days lay in the direction of the first quadrant from the island, as was stated in the Bulletin for February. The observations of March 1, 2, and 3 clearly show that the typhoon recurved northeastward, the vortex being then successively east and northeast of Yap.

The recurving is fully borne out by the observations made at the meteorological station on Guam Island on March 3, 4, and 5, as may be seen in the following table:

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM, LADRONE ISLANDS, FEBRUARY 28 TO MARCH 5, 1911.

| Date and hour. | Pressure. | Wind. |  | Weather. | Rainfall (daily total). | Date and hour. | Pressure. | Wind. |  | Weather. | Rainfall (daily total). |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Direction. | Force. |  |  |  |  | Direction. | Force. |  |  |
| February 28: | *mm.* |  | *0-12.* |  | *mm.* | March 3: | *mm.* |  | *0-12.* |  | *mm.* |
| 6 a. m | 757.55 | ENE | 3 | o | ---------- | 3 p. m | 754.18 | SSE | 5 | o | 7.6 |
| 2 p. m | 56 | ENE | 4 | o | 18.5 | March 4: |  |  |  |  | ---------- |
| March 1: |  |  |  |  |  | 6 a. m | 55.25 | ESE | 4 | o | ---------- |
| 6 a. m | 57.22 | ENE | 2 | o | ---------- | Noon | 54.30 | SE | 5 | o, d | ---------- |
| 2 p. m | 56.05 | E-ESE | 3 | o | 29.2 | 1 p. m | 53.45 | ESE-SE | 4 | o | ---------- |
| March 2: |  |  |  |  |  | 2 p. m | 53.17 | ESE | 5 | o | ---------- |
| 6 a. m | 56.72 | SE | 3 | o | ---------- | 3.30 p. m | 52.47 | ESE | 6 | o | 7.6 |
| 2 p. m | 55.42 | SE | 3 | o | 43.6 | March 5: |  |  |  |  | ---------- |
| March 3: |  |  |  |  |  | 6 a. m | 54.55 | SSE | 5 | o | ---------- |
| 6 a. m | 56.37 | SSE | 2 | o | ---------- | 10 a. m | 55.37 | SSE | 4-5 | o | ---------- |
| Noon | 55.05 | SSE | 5 | o | ---------- | 2 p. m | 54.28 | SSE | 4 | o | ---------- |
| 2 p. m | 54.40 | SSE | 5 | o | ---------- | 4 p. m | 54.48 | SSE | 3 | o | 4.6 |

On the occasion of this typhoon the following notices were cabled by Manila Observatory to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

February 28, 10.45 a. m.: Typhoon near or over the Western Carolines; direction unknown.
March 1, 8.45 a. m.: Typhoon near or over the Western Carolines; almost stationary.
March 2, 8.45 a. m.: Typhoon north of the Western Carolines, moving northwest.
March 3, 10.45 a. m.: Typhoon west of Guam, recurving northeastward.

By Zikawei Observatory the following dispatches were wired to the stations along the coast of China:

February 27, 9.45 a. m.: Typhoon over the Caroline Islands, moving northwest.
February 28, 9.30 a. m.: Typhoon over the Caroline Islands, moving northwest.
March 1, 4.30 p. m.: Typhoon Yap, south to east, within 240 miles, moving northwest.
March 2, 10 a. m.: Typhoon Yap, north to east, within 240 miles, moving northwest.
March 2, 4 p. m.: Typhoon Yap, north to west, within 240 miles, moving northwest.
March 3, 10 a. m.: Typhoon Yap, north to west, beyond 240 miles, recurving.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes es para todas las estaciones de Filipinas mayor que la de Marzo, 1910. Las mayores presiones se observaron en todas partes el día 27; y las presiones más bajas tuvieron lugar generalmente el 10 ú 11 en Visayas, Mindanao y sur de Luzón, y el 15 en el centro y norte de Luzón.

La temperatura media mensual apenas se diferencia de la del año pasado en el sur de Luzón, en Visayas y Mindanao: es ligeramente menor en el centro y norte de Luzón. Los valores extremos para Manila fueron 34.7 °C y 16.2 °C: el primero fué registrado el día 16, y el segundo los días 9 y 10.

**Precipitación acuosa.**—Á excepción de unas pocas estaciones, la lluvia caída este mes es menor que la de Marzo del año próximo pasado. El total de agua recogida en todo el mes en los pluviómetros del Observatorio no pasa de 10 mm., cantidad inferior á la normal de Marzo en 8.8 mm.

## DEPRESIONES Y TIFONES.

Fuera del tifón de Carolinas de que luego hablaremos y que mencionamos ya en el boletín del mes pasado, sólo hubo indicios de perturbación atmosférica en Filipinas la mañana del día 10, cuando una bajada extraordinaria observada á 10 a. m. en los barómetros de la parte oriental de las Islas Visayas, juntamente con los vientos allí dominantes en aquella hora, nos hicieron anunciar una depresión en el Pacífico al E de las Visayas. Sin embargo, vinieron á tranquilizarnos pronto las observaciones de la tarde del mismo día 10 y más aún las de la mañana siguiente, por las cuales dedujimos que la tal depresión se había deshecho por completo, cesando por lo tanto todo peligro para el Archipiélago.

### EL TIFÓN DE LAS CAROLINAS OCCIDENTALES, 26 DE FEBRERO Á 5 DE MARZO, 1911.

Este tifón parece que se hallaba ya formado el 26 de Febrero hacia el ESE de Yap y á una distancia mayor de 300 millas. Creemos serán de interés para nuestros lectores las observaciones meteorológicas hechas á bordo del vapor alemán *Coblenz* en su viaje de Australia á las Carolinas y Filipinas. Pueden verse en el texto inglés. La violencia del temporal impidió á este barco hacer la escala acostumbrada de Yap. No menos interesantes son las observaciones hechas en nuestra estación de Yap desde el 25 de Febrero hasta el 3 de Marzo. Con todo, debe tenerse presente que la dirección de los vientos y nubes de los días 25 y 26 y aun de la mañana del 27 obedecían más bien á otra depresión que existía aquellos días hacia el primer cuadrante de aquella estación, según indicamos en el boletín de Febrero. Las observaciones de los días 1, 2 y 3 de Marzo indican con mucha claridad la recurva de este tifón hacia el nordeste cuando se hallaba el vórtice al E y NE de Yap.

Esta recurva del tifón la confirman plenamente las observaciones hechas en Guam los días 3, 4 y 5 de Marzo, las cuales damos también en una tabla en el texto inglés.

Véanse á continuación los avisos de tifón dados por el Observatorio de Manila á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Febrero, día 28, 10.45 a. m.: Tifón en, ó cerca de, las Carolinas Occidentales: dirección desconocida.
Marzo, día 1, 8.45 a. m.: Tifón en, ó cerca de, las Carolinas Occidentales: casi estacionario.
Día 2, 8.45 a. m.: Tifón al N de las Carolinas Occidentales, moviéndose al NW.
Día 3, 10.45 a. m.: Tifón al W de Guam, recurvando al nordeste.

El Observatorio de Zikawei envió también los siguientes avisos de tifón á las estaciones de la costa de China:

Febrero 27, 9.45 a. m.: Tifón en las Carolinas, moviéndose al NW.
Día 28, 9.30 a. m.: Tifón en las Carolinas, moviéndose al NW.
Marzo 1, 4.30 p. m.: Tifón hacia el SE de Yap, distancia menor de 240 millas, moviéndose al NW.
Día 2, 10 a. m.: Tifón hacia el NE de Yap, distancia menor de 240 millas, moviéndose al NW.
Día 2, 4 p. m.: Tifón hacia el NW de Yap, distancia menor de 240 millas, moviéndose al NW.
Día 3, 10 a. m.: Tifón hacia el NW de Yap, distancia mayor de 240 millas, recurvando.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 760.66 | 25 | 29.7 | 21 | 26.6 | 28.7 | 27.1 | 27.5 | 27.2 | 27.7 | 73.5 | 17.2 | 5.5 | 4.2 |
| 2 | 60 44 | 23.5 | 28.5 | 20.6 | 26.5 | 27.7 | 27.2 | 27.3 | 27 | 27.7 | 81.8 | 17.5 | 2.2 | 1.8 |
| 3 | 60.32 | 24.4 | 31.1 | 18.4 | 25.8 | 26.9 | 27 | 27.2 | 27.2 | 27.7 | 73.5 | 16.4 | 5.2 | 3.7 |
| 4 | 60.68 | 24.7 | 31.3 | 21 | 26 | 28 | 27 | 27.2 | 27.2 | 27.6 | 73.4 | 16.7 | 4.8 | 3.9 |
| 5 | 60.68 | 24.9 | 31.8 | 17.7 | 25.8 | 28.5 | 27 | 27.5 | 27.1 | 27.6 | 69.1 | 15.7 | 7.2 | 5.4 |
| 6 | 59.98 | 24.7 | 32.5 | 17.6 | 26.2 | 28.7 | 27.3 | 27.5 | 27.2 | 27.5 | 67.1 | 14.8 | 7.1 | 5.2 |
| 7 | 59.97 | 24.4 | 32 | 18.2 | 26.1 | 28.2 | 27.2 | 27.7 | 27.2 | 27.6 | 70.7 | 15.8 | 6.8 | 4.8 |
| 8 | 60.10 | 24.1 | 31.5 | 16.3 | 25.8 | 28.3 | 27.1 | 27.5 | 27.2 | 27.5 | 68 | 14.7 | 7.1 | 5.2 |
| 9 | 60.06 | 23.9 | 31.2 | 16.2 | 25.8 | 28 | 27.1 | 27.4 | 27.2 | 27.5 | 71.2 | 15.3 | 6 | 4.3 |
| 10 | 59.29 | 24.6 | 32.2 | 16.2 | 25.8 | 28.3 | 27.1 | 27.6 | 27.2 | 27.5 | 69.3 | 15.5 | 6 | 5 |
| 11 | 59.51 | 26 | 32.1 | 20.2 | 26.8 | 28.4 | 27.5 | 27.8 | 27.2 | 27.6 | 71.6 | 17.7 | 4.7 | 3.4 |
| 12 | 60.43 | 25 | 30.1 | 21.8 | 27 | 27.8 | 27.6 | 27.7 | 27.3 | 27.7 | 81.7 | 19.2 | 2.1 | 2 |
| 13 | 60.62 | 26.5 | 33.7 | 20 | 26.5 | 28.2 | 27.5 | 27.7 | 27.3 | 27.7 | 73.6 | 18.4 | 7 | 4.8 |
| 14 | 59.83 | 27.1 | 33.8 | 21.1 | 26.9 | 28.2 | 27.7 | 27.8 | 27.3 | 27.7 | 69.4 | 17.9 | 7 | 5.3 |
| 15 | 58.89 | 26.2 | 33.6 | 19.6 | 26.7 | 28.1 | 27.6 | 27.9 | 27.3 | 27.7 | 71.1 | 17.5 | 6.7 | 4.8 |
| 16 | 59.12 | 26.7 | 34.7 | 19.5 | 26.4 | 28.5 | 27.6 | 28 | 27.3 | 27.6 | 70.3 | 18 | 6.1 | 4.6 |
| 17 | 59.31 | 26.7 | 33.3 | 21.4 | 27.2 | 28.9 | 27.9 | 28.2 | 27.3 | 27.7 | 79.7 | 20.4 | 5 | 3.5 |
| 18 | 59.47 | 26.9 | 31.8 | 23.3 | 27.8 | 29.4 | 28 | 28.4 | 27.3 | 27.7 | 80 | 20.9 | 4.6 | 3.3 |
| 19 | 60.02 | 27.1 | 32.8 | 22.8 | 27.9 | 29.9 | 28.3 | 28.7 | 27.3 | 27.7 | 73.1 | 19.3 | 4.4 | 3.9 |
| 20 | 60.81 | 24.3 | 28.7 | 21.1 | 27.7 | 28.1 | 28.3 | 28.5 | 27.3 | 27.7 | 81.5 | 18.2 | 2.8 | 2.1 |
| 21 | 60.71 | 25.8 | 32.5 | 19.9 | 26.5 | 28.3 | 27.9 | 28.1 | 27.3 | 27.7 | 75 | 18.2 | 5.4 | 4 |
| 22 | 60.99 | 25.8 | 32.3 | 19.6 | 26.6 | 28.3 | 27.8 | 28 | 27.3 | 27.7 | 71.8 | 17.3 | 5.9 | 4.5 |
| 23 | 60.94 | 25.8 | 32.2 | 19.4 | 26.6 | 28.4 | 27.7 | 28.1 | 27.4 | 27.6 | 72.4 | 17.6 | 4.9 | 3.7 |
| 24 | 60.82 | 26.6 | 33.4 | 21.3 | 27 | 28.8 | 27.9 | 28.1 | 27.5 | 27.6 | 70.9 | 18 | 4.6 | 3.7 |
| 25 | 61.19 | 25.6 | 32.3 | 20.4 | 27 | 27.7 | 27.9 | 27.8 | 27.4 | 27.6 | 75.3 | 18.2 | 3.3 | 2.9 |
| 26 | 62.14 | 25.2 | 29.8 | 23 | 26.9 | 27.8 | 27.8 | 27.8 | 27.5 | 27.7 | 78 | 18.4 | 3.4 | 2.6 |
| 27 | 62.54 | 25.4 | 32.1 | 21.4 | 26.7 | 27.7 | 27.6 | 27.8 | 27.5 | 27.7 | 78.1 | 18.4 | 3.9 | 2.9 |
| 28 | 61.95 | 26 | 31.6 | 20.8 | 26.6 | 27.5 | 27.6 | 27.7 | 27.5 | 27.6 | 73.7 | 18.2 | 5 | 3.5 |
| 29 | 61.91 | 26.8 | 34.3 | 20.3 | 26.5 | 28.1 | 27.6 | 27.8 | 27.6 | 27.7 | 64.9 | 16.3 | 7.9 | 6.1 |
| 30 | 61.57 | 26.6 | 33.8 | 20.2 | 26.9 | 28 | 27.8 | 27.9 | 27.5 | 27.7 | 62.3 | 15.3 | 8 | 6.3 |
| 31 | 60.02 | 25.6 | 32.4 | 19.4 | 26 7 | 27.3 | 27.7 | 27.6 | 27.6 | 27.7 | 67.9 | 16.4 | 5.2 | 4.1 |
| Mean | 760.48 | 25.5 | 32 | 20 | 26.6 | 28.2 | 27.6 | 27.8 | 27.3 | 27.6 | 72.9 | 17.4 | 5.3 | 4 |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 165.8 | 125.5 |
| Departure from normal | —0.04 | —1.1 | —0.3 | —1.4 | -------- | -------- | -------- | -------- | -------- | -------- | +1.0 | —0.8 | -------- | -------- |

| Date. | Wind. | | | | Clouds. | | | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | | | |
| | | | | | | Upper. | | Lower. | | | | | |
| | | *Km.* | *Km.* | | *0-10.* | | | | | *h.* | *m.* | *mm.* | |
| 1 | N quad. | 404.5 | 26.5 | N | 1.8 | Ci. | | Cu. | | 9 | 40 | -------- | |
| 2 | N quad. | 203.5 | 23 | N | 9 | A.-Cu. | | Cu. | E | 2 | 05 | 0.9 | d° a. |
| 3 | NE quad. | 138 | 15.5 | N | 4.9 | A.-Cu. | SbyW | Cu. | E | 7 | 35 | -------- | |
| 4 | SE quad. | 201 | 18.5 | ESE | 6.2 | ---------------- | | Cu. | E | 6 | 15 | -------- | |
| 5 | SE quad. | 211.5 | 21 | SSE | 1.6 | ---------------- | | Cu. | ESE | 10 | 00 | -------- | |
| 6 | SE quad. | 154.5 | 14 | ESE | 1.8 | ---------------- | | Cu. | | 10 | 15 | -------- | |
| 7 | SE quad. | 223.5 | 23.5 | SSE | 4.7 | A.-Cu. | | Cu. | E | 6 | 50 | -------- | |
| 8 | E quad. | 271.5 | 27 | SE | 2.4 | Ci. | | Cu. | E | 9 | 35 | -------- | |
| 9 | E quad. | 224 | 18.5 | W | 3.5 | A.-Cu. | | Cu. | E quad. | 9 | 55 | -------- | |
| 10 | SE, W quads. | 216 | 20.5 | NW | 3.2 | Ci.-S. | | Cu. | | 8 | 40 | -------- | |
| 11 | NE quad. | 176 | 26 | NEbyE | 6.4 | Ci. | SWbyW | Cu. | ESE | 7 | 20 | -------- | |
| 12 | NE quad. | 119.5 | 14.5 | WSW | 7.9 | A.-Cu. | SWbyS | S.-Cu. | EbyN | 2 | 35 | .6 | Ω ☈ a. d a. p. |
| 13 | SE | 264.5 | 27 | SSE | 1.5 | ---------------- | | Cu. | E | 10 | 30 | -------- | |
| 14 | SE | 237 | 24 | SE | 3.9 | ---------------- | | Cu. | E | 10 | 25 | -------- | |
| 15 | SE | 257 | 25 | ESE | 1.9 | ---------------- | | Cu. | E | 9 | 40 | -------- | |
| 16 | SE | 191.5 | 16 | W | 3.2 | A.-Cu. | | Cu. | E | 9 | 10 | -------- | |
| 17 | SW quad. | 186.5 | 16.5 | WbyN | 3.2 | Ci. | | Cu. | E | 10 | 00 | -------- | ☈ p. |
| 18 | W quad. | 228 | 26 | SWbyW | 4.2 | Ci., A.-Cu. | | Cu. | E | 7 | 05 | -------- | |
| 19 | N | 272.5 | 17.5 | W | 3.4 | Ci.-S. | | Cu. | E | 9 | 05 | -------- | ☈ ●° p. |
| 20 | E quad. | 212.5 | 21 | SE | 9.8 | Ci.-S. | | Fr.-N. | E | 0 | 00 | 2.7 | ● d a. |
| 21 | SE | 188 | 20 | SE | 4.2 | A.-Cu. | | Cu. | E | 8 | 05 | -------- | |
| 22 | SE quad. | 209.5 | 18 | SSE | 1.7 | Ci. | | Cu. | | 7 | 25 | -------- | |
| 23 | E quad. | 188 | 18 | SE | 3.7 | Ci. | | Cu. | E | 5 | 40 | -------- | |
| 24 | SE quad. | 125.5 | 15.5 | W | 6 | A.-Cu. | | Cu. | E | 3 | 40 | -------- | |
| 25 | E quad. | 98.5 | 12.5 | W | 7.1 | A.-Cu. | | Cu. | E | 4 | 20 | 5.8 | p p. |
| 26 | E quad. | 122 | 14 | ESE | 10 | Ci.-S. | | Cu. | EbyN | 0 | 10 | -------- | ●° p. |
| 27 | E quad. | 118 | 18 | SE | 8.5 | Ci.-S. | | Cu.-N. | E | 3 | 05 | -------- | d° p. |
| 28 | E quad. | 138.5 | 18 | E | 7.4 | A.-Cu. | | Cu. | E | 5 | 05 | -------- | d° p. |
| 29 | E quad. | 215 | 25.5 | E | 3.4 | ---------------- | | Cu. | E | 10 | 25 | -------- | |
| 30 | E quad. | 223.5 | 21 | E | 2.6 | Ci | | Cu. | E | 10 | 20 | -------- | |
| 31 | E quad. | 200.5 | 18 | W | 5.5 | Ci. | | Cu. | E | 7 | 40 | -------- | |
| Mean | ---------- | 200.6 | 20 | ---------- | 4.7 | ---------------- | | ---------------- | | 7 | 11 | -------- | |
| Total | ---------- | -------- | -------- | ---------- | -------- | ---------------- | | ---------------- | | 222 | 35 | 10 | |
| Departure from normal | ---------- | —25.2 | -------- | ---------- | +0.3 | ---------------- | | ---------------- | | —5 | 58 | —8.8 | |

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[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 759.44 | 26.6 | 29.7 | 23.2 | 84.8 | NW quad. | 1.8 | 7 | Ci.-S., A.-Cu. NE | Cu.-N. | 37 | Ω$^2$ a ∞ ●$^2$ p. |
| 2 | 59.28 | 26.3 | 28.9 | 23.9 | 83.5 | NW quad. | 1.3 | 5.7 | Ci. | Cu. W | ------ | ●$^0$ a. ∞ p. |
| 3 | 59.50 | 26.6 | 29.5 | 23.6 | 78.5 | NE, NNW | 1.8 | 5.2 | A.-Cu. NE | Cu., Cu.-N. | 1 | ∞ p. |
| 4 | 60.36 | 25.5 | 28.1 | 23 | 80.8 | NE | 1.7 | 7.3 | A.-Cu. NE | Cu. W | 2 | ●$^0$ a. Ω$^2$ p. |
| 5 | 60.50 | 25.6 | 29.7 | 21.1 | 80.2 | NE quad. | 1.2 | 3.2 | Ci. | Cu. | ------ | Ω$^2$ a. ∞ Ω$^2$ p. |
| 6 | 59.91 | 24.2 | 28.8 | 19.1 | 81.5 | NW | .7 | 1.8 | Ci. NE | Cu. | ------ | Ω$^2$ a. ∞ Ω$^2$ p. |
| 7 | 59.38 | 24.1 | 28.5 | 20.3 | 82.3 | ESE, E | .3 | 4.7 | Ci.-S., Ci. | Cu. | ------ | Ω$^2$ a. p. |
| 8 | 59.22 | 24.3 | 28.5 | 19.8 | 84.5 | NW | .8 | 3.2 | A.-Cu. NE | Cu. | ------ | Ω$^2$ a. ∞ Ω$^2$ p. |
| 9 | 59.06 | 25.1 | 28.6 | 22 | 87.3 | SW quad. | 1 | 7.5 | Ci.-S. NE | Cu.-N. SW | ------ | Ω$^0$ a. p. ∞ p. |
| 10 | 58.05 | 26 | 29.7 | 22.3 | 83.5 | NW quad. | 1.2 | 6.7 | A.-Cu. E | Cu. W | | Ω$^2$ a. Ω$^0$ p. |
| 11 | 58.24 | 26.1 | 30.7 | 22.9 | 84.8 | SW | 1 | 6.8 | A.-Cu. E | Cu. SW | 35.6 | Ω$^0$ a. ☈ ●$^2$ p. |
| 12 | 60.02 | 26.3 | 30.3 | 21.7 | 84.2 | ENE | 1.2 | 1.8 | ------------------ | Cu. | ------ | Ω$^2$ a. |
| 13 | 60.16 | 26.6 | 29.7 | 23.2 | 84.3 | NE quad. | 1.8 | 5.8 | Ci. | Cu. E | 13.7 | d$^0$ a. ● p. |
| 14 | 59.17 | 26 | 31 | 22.1 | 83.8 | NE quad. | 1.2 | 4.2 | A.-Cu. | Cu. E | ------ | ●$^0$ a. Ω$^2$ p. |
| 15 | 58.81 | 25.8 | 30.4 | 22 | 85.5 | Variable | .5 | 5.3 | Ci.-S., Ci. | Cu. E | ------ | Ω$^2$ a. d$^0$ Ω$^2$ p. |
| 16 | 59.02 | 26.1 | 30.4 | 22.2 | 87.2 | ENE | .7 | 4.2 | Ci. NW | Cu.-N. E | ------ | Ω$^2$ a. ∞ < p. |
| 17 | 59.01 | 26.6 | 31.4 | 23.4 | 88.3 | NE | .7 | 5.3 | Ci.-S. N | Cu.-N. | 66.6 | Ω$^2$ a. d$^0$ ●$^2$ p. |
| 18 | 59.56 | 24.8 | 28 | 22.2 | 91 | SE, NE | .3 | 9.7 | A.-Cu. | Cu.-N. NE | 3 | ●$^2$ a. Ω$^0$ p. |
| 19 | 59.70 | 26.1 | 29.9 | 22.2 | 83.8 | NE quad. | .8 | 3 | A.-Cu. NE | Cu. N | ------ | Ω$^0$ a. Ω$^2$ p. |
| 20 | 59.93 | 25.4 | 30.2 | 21.3 | 85.5 | Variable | .7 | 3.5 | Ci., A.-Cu. | Cu. NE | ------ | Ω$^2$ a. ∞ Ω$^2$ p. |
| 21 | 60 | 26.2 | 30.5 | 21.8 | 84.7 | NE quad. | .8 | 3.8 | Ci., Ci.-S. | Cu. NE | ------ | Ω$^2$ a. ∞ Ω$^2$ p. |
| 22 | 60.12 | 26.3 | 30.5 | 23 | 85 | NE | 1 | 4.2 | ------------------ | Cu. NE | 5.3 | Ω$^2$ ⌒ ●$^0$ a. Ω$^2$ p. |
| 23 | 59.98 | 26 | 30.6 | 21.5 | 85.8 | Variable | 1 | 5.5 | Ci.-S. | Cu. E | ------ | Ω$^2$ a. p. |
| 24 | 60.02 | 25.3 | 30.2 | 23.4 | 91.3 | Variable | .5 | 4.2 | Ci., Ci.-S. | Cu. NE | 27.7 | Ω$^2$ a. ●$^2$ p. |
| 25 | 60.16 | 26 | 30.4 | 22.6 | 87 | NE quad. | .8 | 3.7 | Ci.-S. | Cu.-N. NE | ------ | Ω$^2$ p. |
| 26 | 60.74 | 25.7 | 30.1 | 22.8 | 85.3 | SE quad. | .7 | 5.2 | A.-Cu. SE | Cu.-N., Cu. NE | 4.8 | Ω$^2$ ●$^0$ a. Ω$^2$ p. |
| 27 | 60.95 | 26.6 | 30.4 | 22.2 | 81.3 | ENE | 1.3 | 3 | A.-Cu. NE, SE | Cu.-N. NE | ------ | Ω$^2$ a. p |
| 28 | 60.54 | 25.5 | 30.5 | 22.3 | 89.5 | E quad. | 1 | 5.2 | Ci.-S. | Cu.-N. NE | 9.4 | Ω$^2$ ●$^0$ a. p. |
| 29 | 60.30 | 26.2 | 29.6 | 22.4 | 85.8 | NE | 3 | 7.5 | ------------------ | Fr.-N. NE | 23.4 | ● a. ↙$^0$ ●$^2$ p. |
| 30 | 59.63 | 25.2 | 27.2 | 23.3 | 90.5 | NE quad. | 1.8 | 10 | ------------------ | Fr.-N., Cu.-N. NE | 183.8 | ●$^2$ a. p ☈ p. |
| 31 | 58.44 | 24.3 | 27 | 22.1 | 93.5 | NW quad. | 1.2 | 9.5 | ------------------ | Cu.-N. NE | 17 | ●$^2$ ☈$^2$ a. T$^0$ p. |
| Mean | 759.65 | 25.7 | 29.6 | 22.2 | 85.3 | ------------ | 1.1 | 5.3 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ------------------ | ------------------ | 430.3 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 759.46 | 26.3 | 30.5 | 22.3 | 75.5 | Variable | 6.1 | 4.2 | Ci. | Cu. NNE | ------ | ≡$^0$ Ω a. < p. |
| 2 | 59.20 | 25.9 | 31.5 | 21.9 | 72.3 | N, E | 8.7 | 2.8 | Ci. | Cu. N | ------ | Ω a. |
| 3 | 59.37 | 25.8 | 29.2 | 22.4 | 72.5 | NE quad. | 11.2 | 3 | A.-Cu. ENE | Cu. NNE | ------ | ≡$^0$ Ω a. |
| 4 | 59.99 | 25.1 | 28.5 | 21.5 | 78 | NE quad. | -------- | 4 | Ci. | Cu. NNE | ------ | Ω a. |
| 5 | 60.35 | 25 | 28.5 | 20.7 | 74.7 | NE quad. | 10.9 | 3 | Ci. | Cu. NNE | ------ | Ω a. ∞ p. |
| 6 | 59.83 | 24.7 | 29 | 20.5 | 66.8 | NE quad. | 8.3 | 2.8 | Ci. | Cu. NNE | ------ | ≡$^0$ Ω a. ∞ p. |
| 7 | 59.32 | 25.2 | 29.9 | 20.7 | 65.7 | NE quad. | 10 | 2.7 | Ci. | Cu. NE | ------ | Ω a. p. ∞ p. |
| 8 | 59.21 | 24.8 | 29.3 | 20.1 | 69 | E | 8.6 | 2.5 | Ci. | Cu. NNE | ------ | ≡$^0$ Ω a. p. ∞ p. |
| 9 | 58.96 | 25.3 | 30.6 | 19.1 | 72.2 | E quad. | 5.6 | 3.5 | Ci. | S.-Cu., Cu. ENE | ------ | ≡$^0$ Ω a. |
| 10 | 58.22 | 26 | 30.5 | 20.7 | 72.2 | SE | 6.7 | 5 | Ci.-S. E | Cu. N | ------ | ≡$^0$ Ω a ○ ⊍ p. |
| 11 | 58.30 | 26.7 | 30.6 | 23.2 | 76.2 | SSE | 6.8 | 5.8 | Ci.-S. E | Cu.-N. N | 6.4 | Ω ≡$^0$ a. ●$^0$ ⦶ p. |
| 12 | 59.78 | 27.1 | 30.6 | 24.1 | 74.5 | NE quad. | 10.2 | 4.7 | Ci., A.-Cu. | Cu. E | ------ | ≡$^0$ ● a. |
| 13 | 60.10 | 26.7 | 30.5 | 23.3 | 74.2 | NE quad. | 11.4 | 3.3 | Ci. | Cu. E | ------ | Ω a. |
| 14 | 59.21 | 26.5 | 30.8 | 22.9 | 71.3 | N, E | 10.1 | 2.2 | Ci. | Cu. E | ------ | Ω a. ∞ p. |
| 15 | 58.51 | 26.7 | 30.5 | 23.4 | 71.7 | ENE | 10.7 | 2.7 | Ci. | Cu. E | ------ | ≡$^0$ Ω a. ∞ p. |
| 16 | 58.65 | 27 | 31 | 23.5 | 73.5 | E quad. | 8 | 2.7 | Ci. | Cu. ENE | ------ | ≡$^0$ Ω a. < p. |
| 17 | 58.77 | 27 | 30.8 | 24 | 75.2 | E | 7.9 | 3.5 | Ci. | Cu. ENE | ------ | ≡$^0$ Ω a. < p. |
| 18 | 59.29 | 26.7 | 30.4 | 23.3 | 79 | SE quad. | 5.2 | 6.2 | Ci.-S. | Cu.-N. N | ------ | ☈ a T < p. |
| 19 | 59.39 | 25.8 | 30.2 | 23 | 81.2 | E | 5.1 | 4.5 | Ci. | Cu. E, ENE | 7.6 | ☈ ● a. < p. |
| 20 | 59.84 | 26.6 | 29.8 | 23.6 | 72.8 | E | 11.6 | 2.5 | Ci. | Cu. NE | ------ | ≡$^0$ Ω$^2$ a. < p. |
| 21 | 59.82 | 26.7 | 30.2 | 23.2 | 75.7 | E quad. | 11.6 | 2.8 | Ci. | Cu. ENE | ------ | ≡$^0$ Ω a. |
| 22 | 59.98 | 27.4 | 30.6 | 23.8 | 73 | NE quad. | 10.6 | 3.7 | Ci. | Cu. ENE | ------ | Ω ●$^0$ a. ☈ a. p. |
| 23 | 59.86 | 27 | 30.5 | 23.5 | 74 | E | 10.2 | 2.7 | Ci. | Cu. ENE | ------ | Ω ≡$^0$ a. ∞ p. |
| 24 | 59.76 | 26.9 | 30.5 | 22.3 | 73.2 | NE quad. | -------- | 3.2 | Ci. | Cu. ENE | ------ | ≡$^0$ Ω a. d$^0$ p. |
| 25 | 59.98 | 27 | 30.6 | 22.8 | 75.3 | NE quad. | 11.9 | 3.3 | Ci. | Cu. ENE | 3.6 | Ω a. ●$^0$ ☈ p. |
| 26 | 60.56 | 27 | 30.5 | 23.6 | 76 | ENE | 10.8 | 3.5 | Ci. | Cu. ENE | ------ | Ω ●$^0$ a. ☈ p. |
| 27 | 61 | 27.2 | 30.5 | 22.8 | 70 | NE quad. | 11.2 | 3.5 | Ci. | Cu. ENE | ------ | Ω a. |
| 28 | 60.65 | 27 | 30.8 | 23.6 | 72.7 | NE quad. | 13.2 | 4 | Ci. | Cu. ENE | ------ | Ω a. ☈ p. |
| 29 | 60.29 | 27 | 31.5 | 24.5 | 73.8 | NE quad. | 12.4 | 5.5 | Ci. | Cu. ENE | .8 | Ω a. ●$^0$ ☈ p. |
| 30 | 59.74 | 27.7 | 31.5 | 24.9 | 67.2 | NE | 11.6 | 7.3 | Ci.-S. E | Cu.-N. NE | ------ | Ω ○ a. ∞ p. |
| 31 | 58.45 | 26.7 | 28 | 25.3 | 75.3 | NE quad. | 6.2 | 8.2 | Ci.-S. | Cu.-N. NE | .6 | Ω T$^0$ d a. < p. |
| Mean | 759.54 | 26.4 | 30.3 | 22.7 | 73.4 | ------------ | 9.4 | 3.8 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | ---------- | ------------------ | ------------------ | 19 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 759.84 | 26 | 31.4 | 21.2 | 77.7 | NE | 7.4 | 3.2 | Ci., Ci.-S. | Cu. | ------ | Ω a. ● p. |
| 2 | 59.49 | 25.7 | 31.9 | 21.8 | 79 | NE | 9.4 | 3.3 | Ci., Ci.-S. | Cu. | 0.3 | ∞ d ● p. |
| 3 | 59.46 | 25.8 | 30.4 | 22 | 75.3 | NE quad. | 12.9 | 3 | Ci. | Cu. NE | ------ | |
| 4 | 59.86 | 25.6 | 30.2 | 21.9 | 73.7 | NE quad. | 16.6 | 2.2 | Gi. | Cu. | ------ | Ω a. ∞ p. |
| 5 | 60.24 | 25.5 | 30.3 | 21.4 | 68 | NE quad. | 15.6 | 2.2 | Ci. | Cu. | ------ | ∞ p. |
| 6 | 59.73 | 25.1 | 30.6 | 20.5 | 63.8 | NE quad. | 12.9 | 1.8 | Ci. | Cu. | ------ | ∞ p. |
| 7 | 59.34 | 24.9 | 30.2 | 19.5 | 65.5 | NE quad. | 15.2 | 2 | Ci. | Cu. | ------ | ∞ p. |
| 8 | 59.24 | 25.3 | 31.3 | 20.8 | 69 | NE quad. | 12.4 | 2.5 | Ci. | Cu. | ------ | |
| 9 | 59.16 | 25.5 | 32.6 | 19.8 | 72.3 | N | 10.8 | 2.5 | Ci. | Cu. | ------ | |
| 10 | 58.47 | 25.8 | 31.8 | 20.7 | 71.8 | NE quad. | 11.2 | 4 | Ci. | Cu. NE | ------ | ψ p. |
| 11 | 58.40 | 26.2 | 32.1 | 21.1 | 80.3 | N | 8 | 7.2 | A.-Cu. ENE | Cu. N | 6.1 | ●° a. ⛈ ● ⚡ p. |
| 12 | 59.42 | 27.5 | 33.5 | 23 | 74.2 | NE quad. | 9.1 | 4 | Ci. | Cu. | ------ | |
| 13 | 59.86 | 27.9 | 33.7 | 23.7 | 68.8 | NE quad. | 15 | 3.3 | Ci. | Cu. NE | ------ | |
| 14 | 59.17 | 27.1 | 32.3 | 23.2 | 69.2 | NE | 15.2 | 2.2 | Ci. | Cu. NE | ------ | |
| 15 | 58.49 | 27.2 | 32.3 | 23.2 | 70.2 | NE quad. | 14.1 | 1.8 | Ci. | Cu. | ------ | ∞ p. |
| 16 | 58.70 | 27.6 | 34 | 23.2 | 70.5 | NE quad. | 11.1 | 3.2 | Ci. | Cu. | ------ | Ω° a. ⚡ p. |
| 17 | 59 | 26.3 | 32.8 | 23.2 | 78.7 | NE quad. | 9.7 | 4.3 | Ci. | Cu. NE | 16.8 | Ω° ≡° a. ⛈ ● p. |
| 18 | 59.27 | 27 | 32.7 | 23.2 | 75.8 | Variable | 6.2 | 5.2 | Ci. | Cu. | ------ | ⊤ ⚡ p. |
| 19 | 59.63 | 26.8 | 32 | 22.9 | 74 | NE quad. | 12 | 3.5 | A.-Cu. E | Cu. NNE | ------ | Ω° d a. ⊤ p. |
| 20 | 59.87 | 26.8 | 31.7 | 23 | 70.2 | N, NE | 16 | 2 | Ci., Ci.-S. | Cu., Cu.-N. | ------ | |
| 21 | 60.04 | 27.2 | 32 | 23.4 | 71.8 | NE quad. | 15.7 | 1.8 | Ci. | Cu. | ------ | Ω° ≡° a. ∞ p. |
| 22 | 60.17 | 27.2 | 32 | 23.5 | 73 | NE quad. | 17.2 | 2 | Ci. | Cu. NE | ------ | Ω° a. ∞ p. |
| 23 | 59.98 | 27.1 | 31.8 | 23.6 | 71.2 | NE quad. | 15.7 | 1.7 | Ci. | Cu. | ------ | Ω° ≡° a. ∞ a. p. |
| 24 | 59.95 | 27.2 | 32 | 23.3 | 72.2 | NE | 14.1 | 2 | Ci. | Cu. NE | ------ | Ω ≡° a. ∞ p. |
| 25 | 59.99 | 27.3 | 32.1 | 23.2 | 72.2 | NE quad. | 16.2 | 2.3 | Ci. | Cu. NE | ------ | Ω ≡° a. ∞ p. |
| 26 | 60.58 | 26.8 | 32.1 | 23.2 | 74.3 | NNE | 14.4 | 3 | Ci. | Cu. NE | ------ | Ω a. |
| 27 | 61.18 | 26.6 | 32.7 | 23.4 | 73.7 | NE quad. | 16.1 | 2.3 | Ci. | Cu. | ------ | Ω° a. ⚡ p. |
| 28 | 60.63 | 27 | 32 | 23.4 | 71.3 | NE quad. | 18 | 2.8 | Ci.-S., A.-Cu. | Cu. | ------ | Ω a. |
| 29 | 60.33 | 27.3 | 31.7 | 23.6 | 71.2 | N, NE | 19.3 | 3.5 | Ci. | Cu. ENE | 4.3 | d² ● a. |
| 30 | 60.08 | 26.5 | 31.3 | 23.4 | 71 | N | 19.8 | 6 | Ci.-S. | Cu. ENE | ------ | |
| 31 | 58.72 | 26.5 | 30.8 | 24 | 72.8 | N | 17.2 | 6 | Ci.-S. | Cu. | ------ | ○ a. ⚡ p. |
| Mean | 759.62 | 26.5 | 31.9 | 22.5 | 72.3 | ------------ | 13.7 | 3.1 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 27.5 | |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 759.66 | 25.1 | 30.5 | 21.1 | 85.8 | N | ------ | 5.3 | Ci. | Cu. N | ------ | Ω° a. ⚡ p. |
| 2 | 59.37 | 24.3 | 30.7 | 19.3 | 81.8 | NW quad. | 6.2 | 4.5 | Ci. | Cu.-N. N | ------ | Ω° a. |
| 3 | 59.61 | 25.2 | 30.3 | 20.6 | 81.3 | NW quad. | 5.1 | 5.5 | Ci. | Cu.-N. NE | ------ | |
| 4 | 60.14 | 25 | 31.7 | 20.5 | 76 | N quad. | 7.1 | 5.7 | Ci. | Cu., Cu.-N. NE | ------ | Ω° a. |
| 5 | 60.37 | 24.1 | 30.8 | 17.9 | 74.2 | E quad. | 7.6 | 3.5 | Ci. | Cu. NNE | ------ | Ω° a. |
| 6 | 60.01 | 22.4 | 29 | 16.2 | 77.5 | N | 6.9 | 4.3 | Ci. | Cu. N | ------ | Ω° a. |
| 7 | 59.57 | 23.3 | 29.8 | 17.4 | 77.8 | NW quad. | 6.3 | 5.8 | A.-Cu., Ci. | Cu. E | ------ | Ω° a. |
| 8 | 59.47 | 23.7 | 30.1 | 17.1 | 80 | NW quad. | 6.7 | 3.3 | Ci. | Cu. E | ------ | Ω° a. |
| 9 | 59.16 | 24.7 | 30 | 19.9 | 79.4 | NW quad. | 6.8 | 4.7 | Ci. | Cu.-N. E | ------ | Ω° a. |
| 10 | 58.40 | 24.5 | 29.7 | 19.1 | 80.7 | NW quad. | 5.6 | 7.8 | Ci.-S. | Cu.-N. SE | ------ | Ω° a. d° p. |
| 11 | 58.57 | 24.7 | 28.1 | 22.4 | 91.8 | NW quad. | 4.8 | 8.8 | A.-Cu. EbyS | Cu.-N. WbyN | 6.1 | ≡° a. d ⌒ a. p. ⊤ |
| 12 | 59.99 | 26 | 31.5 | 21.3 | 78 | Variable | 7.4 | 2.5 | Ci. | Cu. SE | ------ | Ω° d° a. |
| 13 | 60.37 | 25 | 29.9 | 20.6 | 82 | NE quad. | 6 | 5 | Ci. | Cu., Cu.-N. E | 6.9 | ⊤ a. ● p. |
| 14 | 59.48 | 25.2 | 30.5 | 20.6 | 79.3 | NE quad. | 6 | 4.2 | Ci. | Cu. E | ------ | Ω° a. |
| 15 | 58.72 | 25.2 | 31.4 | 20.7 | 81.9 | NE quad. | 6.3 | 4.2 | Ci. | Cu. E | ------ | Ω° a. ⚡ p. |
| 16 | 58.74 | 26.7 | 32 | 22.1 | 79.8 | NE quad. | 5.8 | 6 | Ci.-S. | Cu. E | ------ | Ω° ≡° a. ⚡ p. |
| 17 | 59.01 | 24.7 | 30.8 | 20.5 | 86.3 | N | 6.6 | 4 | Ci. | Cu. ENE | ------ | Ω° d° a. ⊤ ⌒ p. |
| 18 | 59.38 | 25.7 | 30.2 | 20.5 | 85 | S | 7.5 | 7.3 | Ci.-S. S | Cu. | ------ | Ω° a. ⚡ d° p. |
| 19 | 59.51 | 27.1 | 33 | 22.7 | 73.5 | NE quad. | 6.5 | 4.7 | Ci. | Cu. E | ------ | ⚡ a. p. |
| 20 | 60.02 | 24.8 | 31.1 | 20.5 | 84.2 | N | 7.4 | 6.3 | Ci. | Cu.-N. NE | 34.8 | ⛈ ● p. |
| 21 | 60.13 | 24.4 | 30.4 | 21 | 87 | N | 6.2 | 5.5 | Ci. | Cu.-N. E | 2 | Ω° a. ⊤ d° p. |
| 22 | 60.13 | 26.1 | 29.7 | 21.5 | 82.1 | NE quad. | ------ | 5.7 | Ci.-S. | Cu.-N. NE | 2.3 | ⌒ a. d° a. p. ⊤ p. |
| 23 | 60.08 | 25.7 | 30.2 | 19.5 | 78.5 | Variable | ------ | 5.5 | Ci., Ci.-S. | Cu. NE | ------ | Ω° a. |
| 24 | 60 | 24.6 | 30.1 | 19.2 | 82.2 | N, S | ------ | 4.3 | Ci. | Cu.-N. NE | ------ | Ω° a. ⊤ p. |
| 25 | 60.20 | 24.8 | 30.4 | 20.3 | 83.2 | NE quad. | 6.9 | 4 | Ci. | Cu., Cu.-N. NE | 1 | Ω° a. ⛈ d° p. |
| 26 | 60.80 | 24.8 | 30 | 20.8 | 82.2 | S quad. | 5.6 | 6.7 | Ci.-S. E | Cu.-N. | 2 | d ⌒ ⚡ p. |
| 27 | 61.20 | 25 | 29 | 21 | 84 | Variable | 5.4 | 5.7 | Ci.-S. E | Cu. E | 11.2 | ● p. |
| 28 | 61.01 | 25 | 30 | 21.2 | 84.5 | Variable | 7.2 | 7 | A.-Cu. | Cu.-N. E | 10.2 | ⌒ a. ⛈ ● p. |
| 29 | 60.60 | 27.3 | 31.7 | 22.8 | 72.8 | NE quad. | ------ | 6.5 | A.-Cu. SE | Cu., Cu.-N. E | ------ | ≡° a. |
| 30 | 60.02 | 26.6 | 31.5 | 22.9 | 73.8 | NE quad. | 5.9 | 7.7 | Ci.-S. | Cu.-N. NE | ------ | ⚡ p. |
| 31 | 58.68 | 25.4 | 28 | 23 | 85.3 | N quad. | 3.8 | 8.7 | Ci.-S. | Cu.-N. E | ------ | ⚡ d° p. |
| Mean | 759.75 | 25.1 | 30.4 | 20.5 | 81 | ------------ | 6.3 | 5.5 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 76.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 760.19 | 27 | 32.5 | 24.4 | 77.8 | WNW | 1 | 5.5 | Ci. SW | Cu. NNE, N | ------ | |
| 2 | 60.14 | 25.9 | 31.3 | 23.3 | 79.2 | WNW | 1.2 | 4.8 | Ci. | Fr.-Cu. NNE | ------ | Ω$^2$ a. |
| 3 | 60.20 | 26 | 32.7 | 23 | 78.2 | Variable | .7 | 8.2 | ------ | Cu. NNE | 13.7 | ● p. |
| 4 | 61.18 | 25.5 | 30.6 | 22.5 | 77.2 | Variable | .5 | 7.7 | Ci.-S. | Cu.-N. NE | .8 | ●° a. |
| 5 | 61.42 | 25.5 | 32.3 | 21.4 | 75.7 | WNW, SE | .8 | 4 | Ci., Ci.-S. | Cu. NE | ------ | Ω$^2$ a. p. |
| 6 | 60.68 | 25.1 | 31.5 | 19.8 | 74.5 | N quad. | .5 | 5.8 | Ci. SW | Fr.-Cu. NE | ------ | Ω$^2$ a. |
| 7 | 60.08 | 25.1 | 31.4 | 20.8 | 74.3 | NW quad. | .8 | 5.2 | Ci.-S., Ci.-Cu. SW | Cu. NEbyE | .8 | Ω$^2$ a. p. ●° p. |
| 8 | 60 | 25.6 | 32 | 21.4 | 78.2 | NW, SE | 1 | 3.5 | Ci.-S. | Cu. | ------ | Ω$^2$ a. |
| 9 | 59.57 | 26.9 | 31.8 | 23.6 | 74.2 | N | 1.5 | 5 | Ci., Ci.-S. | Fr.-Cu. NE | ------ | |
| 10 | 59.73 | 25.4 | 28.4 | 23.2 | 80.2 | N quad. | 1.5 | 8 | A.-S., Ci.-S. | N.-cf., Cu.-N. NE | ------ | |
| 11 | 59 | 25.4 | 30.4 | 23.5 | 88.8 | NW quad. | .8 | 9.5 | Ci.-S. | N. N | 26 | ⌒ a. ● a. p. ⌈ζ p. |
| 12 | 60.94 | 27.1 | 31.2 | 23.6 | 83.2 | SSE | 1.2 | 5.5 | Ci. | Cu. SE, E | ------ | ● a. Ω$^2$ p. |
| 13 | 61.21 | 25.6 | 30.3 | 23.2 | 84.8 | N, E | .7 | 4 | Ci.-S., Ci. | Cu. ENE | 16.5 | Ω$^2$ a. p. ● a. |
| 14 | 60.11 | 26.3 | 31.2 | 22.4 | 82.2 | SSE | 1 | 3.2 | Ci. | Cu. ENE | ------ | Ω$^2$ a. |
| 15 | 59.56 | 26.7 | 32.3 | 23.1 | 81.6 | NW, SE | .7 | 4.2 | Ci.-S. | Cu. ENE | 1 | Ω$^2$ a. ● ∞$^2$ p. |
| 16 | 59.80 | 26.5 | 31.2 | 23.5 | 86.5 | WNW, SSE | 1 | 4.5 | Ci.-S. | Cu. ENE | ------ | Ω$^2$ a. ⊤ p. |
| 17 | 59.79 | 26.6 | 32 | 24.3 | 84.7 | NW quad. | .7 | 7 | Ci.-S. SW | Cu., Cu.-N. ENE | ------ | |
| 18 | 59.91 | 26.9 | 31.4 | 23.3 | 83.3 | SE quad. | .3 | 7 | Ci.-S. SW | Cu. NE | 6.4 | ● p. |
| 19 | 60.24 | 26.9 | 32 | 23.6 | 78.5 | N quad. | 1 | 3.5 | Ci. | Cu. NE | ------ | Ω° p. |
| 20 | 60.49 | 26.2 | 33.5 | 22.8 | 81.3 | NW | .7 | 3.5 | Ci. | Cu. NE, NNE | 21.8 | Ω$^2$ a. p. ●$^2$ ⌈ζ p. |
| 21 | 60 67 | 26.3 | 31.5 | 23.3 | 85.3 | NNW | .3 | 6 | Ci. | Cu. ENE | 1 | ∞° a. ●° ⌈ζ p. |
| 22 | 60.64 | 26.6 | 31.6 | 24.2 | 81.2 | E | .7 | 5.2 | Ci.-S., Ci. W | Cu. ENE | 1.6 | ∞$^2$ a. ● a. p. |
| 23 | 60.51 | 26.7 | 32.4 | 23.4 | 81.2 | WNW | .7 | 4.5 | Ci. | Cu. ENE | ------ | ∞$^2$ a. |
| 24 | 60.49 | 25.8 | 30.7 | 23.1 | 82.2 | NW | .7 | 5.5 | Ci. SW | Cu.-N. NE | 1.3 | ∞$^2$ Ω a. ● ⊤ p. |
| 25 | 60.79 | 25.7 | 32.7 | 23.6 | 86.3 | NW quad. | .8 | 4.3 | Ci.-Cu. SW | Cu. ENE | 4.3 | ∞$^2$ Ω$^2$ a. ● ⊤ p. |
| 26 | 61.47 | 25.1 | 30.5 | 22.6 | 83 | NW | 1.2 | 6.5 | Ci.-Cu. SW | Cu.-N. ENE | 1.3 | ● a. |
| 27 | 61.92 | 24.7 | 28.6 | 23.3 | 87.8 | NW | 1 | 7.3 | Ci.-Cu. SW | Cu.-N. ENE | 13.5 | ● a. p. |
| 28 | 61.49 | 25.2 | 30.3 | 23 | 86.2 | NW | 1.5 | 5.8 | Ci.-S. | Cu.-N. ENE | 26 | Ω$^2$ a. ● a. p. |
| 29 | 61.26 | 26.8 | 31.5 | 23.2 | 80.7 | E quad. | 1.3 | 6 | Ci. WSW | Cu. ENE | ------ | ● a. |
| 30 | 60.70 | 26.9 | 31 | 24.7 | 73.8 | NE quad. | 1.2 | 6.5 | Ci. SW | Cu. ENE | ------ | ○$^2$ p. |
| 31 | 58.87 | 26.3 | 29.4 | 24.7 | 84.2 | WNW | 1.2 | 7.3 | Ci. | Cu.-N. ENE | 2.8 | ● ⌈ζ p. |
| Mean | 760.39 | 26.1 | 31.3 | 23.1 | 81.2 | ------ | .9 | 5.6 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 138.8 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Upper. | Clouds. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 760.17 | 25.9 | 30.7 | 23.4 | 83.8 | W quad. | 6.4 | 4.7 | Ci. NW | Fr.-Cu. E, NW | ------ | Ω a. p. |
| 2 | 59.84 | 25.8 | 30.3 | 23.3 | 81.5 | N, NNE | 10.7 | 3.5 | Ci.-S. | Fr.-N. N | ------ | d° a. |
| 3 | 59.98 | 25.7 | 30.3 | 23.2 | 80.8 | N, NNE | 12 | 3.5 | Ci. | Cu. NE, N | ------ | d° a. |
| 4 | 60.56 | 25.9 | 30.8 | 23.3 | 75.8 | E | 12.3 | 5.3 | Ci. | Variable E | ------ | d° a. |
| 5 | 60.93 | 25.4 | 30.8 | 21.2 | 74.3 | E quad. | 6.7 | 2.5 | Ci. | Fr.-Cu. NE | ------ | |
| 6 | 60.52 | 24 | 30.4 | 19.9 | 80.8 | S, NE | 5.4 | 2.8 | Ci. S | Fr.-Cu. E | ------ | Ω$^2$ a. Ω° p. |
| 7 | 60.15 | 24.1 | 30.3 | 19.5 | 80.2 | NE, NNW | 6 | 3 | Ci. | Cu. NE | ------ | Ω$^2$ a. |
| 8 | 59.90 | 24.3 | 29.4 | 20.3 | 81.2 | NE quad. | 8.1 | 4 | Ci.-S. NE | Variable NE | ------ | Ω° a. |
| 9 | 59.75 | 24.5 | 30.2 | 20.2 | 84.5 | NNE | 6.9 | 2.5 | Ci., A.-Cu. | Cu. NE, N | ------ | Ω$^2$ a. |
| 10 | 59.08 | 25.6 | 30.5 | 22.1 | 80.8 | NNW | 6.8 | 6 | Ci. | Cu. NE | ------ | ⊕° ○° a. |
| 11 | 58.79 | 26.5 | 30.3 | 23.7 | 86.8 | N | 10.6 | 8.7 | Ci.-S. | N. N | 2.3 | ●° a. p. ζ p. |
| 12 | 59.96 | 27.3 | 33.3 | 23.8 | 84.3 | SE, NE | 7.2 | 5.2 | Ci.-S. | N., Fr.-N. SE | ------ | ●° Ω° a. |
| 13 | 60.82 | 27.2 | 32 | 24.6 | 81.5 | NE | 9.6 | 5.7 | Ci. | Cu. SE, E | ------ | |
| 14 | 59.89 | 27.1 | 32.1 | 23.8 | 80.7 | E | 9 | 4.3 | Ci. | Cu. E | ------ | d° p. |
| 15 | 58.99 | 26.7 | 31.7 | 23.9 | 81.3 | NE | 8.1 | 4.3 | Ci. NE | Cu. E, NE | ------ | |
| 16 | 59.09 | 27.1 | 31.4 | 24.4 | 83.6 | NE quad. | 6.9 | 4.5 | Ci. | Cu. E | ------ | |
| 17 | 59.37 | 26.9 | 31.3 | 24.2 | 85.2 | Variable | 6.3 | 5.7 | Ci. | Cu. E | ------ | Ω° a. ζ p. |
| 18 | 59.42 | 26.9 | 32.3 | 23.4 | 82.5 | Variable | 5.8 | 5.8 | Ci. SE | Cu.-N. E | ------ | ⌈ζ a. ζ p. |
| 19 | 60.05 | 26.3 | 31.5 | 22.7 | 84 | Variable | 6.3 | 6.3 | Ci. | N.-cf. N | .8 | ∞ ●° a. ζ p. |
| 20 | 60.40 | 27.3 | 32.4 | 24.2 | 78 | NE | 8.5 | 5.7 | Ci. | Cu. E | ------ | d° a. ζ p. |
| 21 | 60.52 | 27.1 | 31.6 | 25.4 | 79.3 | NE | 9.4 | 5.3 | Ci. | Cu. E, NE | ------ | |
| 22 | 60.58 | 27 | 31.8 | 25.2 | 84.2 | NE | 11.2 | 6.3 | Ci. | N.-cf. NE | .8 | ∞° a. ●° a.p. |
| 23 | 60.48 | 27.2 | 31.3 | 24 | 78.8 | NE, NNE | 10.4 | 6.5 | Ci. | Variable NE | ------ | d° ⌈ζ° p. |
| 24 | 60.46 | 27.4 | 31.6 | 25 | 78.3 | NE | 10.5 | 5.8 | Ci. | Cu. NE | ------ | |
| 25 | 60.64 | 26.9 | 31.6 | 23.4 | 78.7 | NNE | 10.1 | 5 | Ci. | Cu. NE | ------ | |
| 26 | 61.18 | 26.4 | 31 | 24.3 | 80.6 | NE | 12.8 | 6 | Ci. | Variable NE | 1 | ∞° a. ⊤° ● p. |
| 27 | 61.90 | 26.6 | 31.3 | 24.5 | 82 | NE | 9.3 | 6.3 | Ci. | N NE | .3 | ⌒ d° a. ⊤° ζ p. |
| 28 | 61.33 | 26.8 | 31 | 24.7 | 82.2 | NE | 11.3 | 6.2 | Ci. | Cu.-N. E, NE | .3 | ∞° a. ●° a. p. |
| 29 | 61.03 | 27.6 | 32.7 | 25 | 75.8 | NE | 14.6 | 5 | Ci. | Cu. E, NE | ------ | |
| 30 | 60.86 | 27.3 | 31.7 | 25.2 | 77.8 | NE, NNE | 12.1 | 5.2 | Ci., Ci.-S. | Cu. NE | ------ | ζ p. |
| 31 | 59.47 | 27.4 | 31.7 | 25.4 | 75 | NE | 15.1 | 6.8 | Ci.-S. | Cu., N.-cf. NE | ------ | ζ p. |
| Mean | 760.20 | 26.4 | 31.3 | 23.5 | 80.8 | ------ | 9.2 | 5.1 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 5.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | | | *mm.* | |
| 1 | 759.75 | 25.6 | 31.6 | 22.1 | 86 | NE | 1.3 | 3.3 | Ci.-S. | | S.-Cu. | N | ------ | ⌓ a. |
| 2 | 59.79 | 23.9 | 29.2 | 21.3 | 91.3 | NE | 1 | 7 | Ci.-S. | | S.-Cu., N. | N | 15.5 | ●° a. p. |
| 3 | 60.12 | 23.8 | 29.1 | 20.2 | 87.8 | NE | 1 | 5.3 | Ci.-S., A.-Cu. | | S.-Cu. | NE | ------ | ⌓ a. |
| 4 | 60.79 | 24.8 | 31.2 | 20 | 79.3 | ENE | 1.3 | 4.3 | A.-Cu. | SE | S.-Cu. | ESE | ------ | |
| 5 | 61.05 | 23.6 | 32.2 | 18.5 | 80 | NE | 1.3 | 1.2 | Ci. | | Cu. | NE | ------ | |
| 6 | 60.33 | 23.3 | 30.6 | 17.7 | 79.3 | N | 1.2 | 1.3 | Ci. | SE | Cu. | NE | ------ | |
| 7 | 59.87 | 23.6 | 31.2 | 18.1 | 79.7 | NE | 1.3 | 4 | Ci., Ci.-S. | | S.-Cu. | NE | ------ | ⌓ a. d° ⦶ p. |
| 8 | 59.53 | 24.6 | 31.2 | 19.7 | 81.8 | N | 1.2 | 4 | Ci.-S. | | Cu. | NE, N | ------ | ⦶ p. |
| 9 | 59.37 | 25.9 | 32.4 | 21.1 | 77.8 | NE | 1.5 | 4.8 | Ci.-S. | | S.-Cu. | NE, ESE | ------ | ⦶ p. |
| 10 | 58.78 | 24.4 | 27.6 | 21.3 | 85.3 | NE | 1.2 | 8.8 | A.-Cu. | | S.-Cu. | NNW | 1 | d p. |
| 11 | 58.39 | 25 | 30.2 | 22.8 | 91.5 | Variable | 1.2 | 10 | Ci.-S. | | S.-Cu. | E, SSE | 4.8 | ⊤ a. p. ●° ϟ p. |
| 12 | 60.17 | 25.4 | 30.4 | 21.6 | 86.5 | E | 1 | 5.2 | Ci., A.-Cu. | | S.-Cu. | SSE, SE | 3.8 | p° a. p. ⊤° ⦶ p. |
| 13 | 60.83 | 24.6 | 29.9 | 20.9 | 88 | NE | 1 | 4.3 | A.-Cu., Ci. | | S.-Cu. | E | 1.3 | d ⊤ a. ⦶ p. |
| 14 | 59.73 | 25.4 | 32.6 | 20.3 | 84.7 | N | 1.3 | 2.5 | Ci.-S. | | Cu. | NE | ------ | ≣ a. ⦶ p. |
| 15 | 59.05 | 25.3 | 31.4 | 20.8 | 85.2 | N | 1.2 | 2.8 | Ci.-S. | | Cu. | ENE | ------ | ⦶ ⌓ a. ☈ ⦶ p. |
| 16 | 59.21 | 26 | 33.2 | 21.5 | 85.2 | N quad. | 1.2 | 3.8 | A.-Cu. | SE | Cu. | E | ------ | ☈ p. |
| 17 | 59.29 | 25.8 | 31.1 | 22.5 | 86.3 | NE | 1 | 5.5 | Ci.-S. | SSE | S.-Cu. | ENE | 5.8 | ⦶ a. p. ● ⊤° ϟ p. |
| 18 | 59.44 | 26.3 | 31.9 | 21.6 | 82.5 | NE | 1 | 5.2 | A.-Cu. | SE | S.-Cu. | | ------ | ⊤ p. |
| 19 | 59.93 | 26 | 33.2 | 21.8 | 79 | NE quad. | 1.2 | 2.5 | ------------------ | | Cu. | NbyE | ------ | ⦶ a. |
| 20 | 60.25 | 25.6 | 33 | 20.6 | 81.3 | NE | 1.3 | 4 | Ci.-S. | | Cu. | NE | ------ | ≣ a. d° p. |
| 21 | 60.39 | 26 | 34.1 | 20.8 | 81.3 | NE | 1.3 | 3.2 | Ci.-S. | | Cu. | NE | ------ | ≣ a. ⊤ p. |
| 22 | 60.35 | 27 | 33.7 | 22.7 | 78 | NE | 1.3 | 3.2 | Ci. | | Cu. | NE | ------ | |
| 23 | 60 33 | 26 | 33.1 | 21.5 | 82.2 | NE | 1.3 | 2.7 | Ci. | | Cu., S.-cf. | NE | ------ | ≣ a. |
| 24 | 60.28 | 25.8 | 33.2 | 21.4 | 82.7 | NE | 1.2 | 4.5 | Ci.-S., A.-Cu. | | Cu. | NE | 2 | ≡° ⊕ a. d p. |
| 25 | 60.68 | 24.4 | 31.9 | 21.5 | 89.3 | NNE | 1.2 | 3.5 | A.-Cu. | E | S.-Cu. | NE | 28.4 | ⌓ ≡° a. ● p. |
| 26 | 61.37 | 24.1 | 30.3 | 21 | 88 | NE | 1.2 | 6.7 | A.-Cu. | E | S.-Cu. | NE, E | 20.8 | ● p. |
| 27 | 61.81 | 24.2 | 28 | 21.6 | 90.2 | NE quad. | 1.2 | 7.3 | A.-Cu. | E | S.-Cu. | E | 5.3 | ● d° p. |
| 28 | 61.35 | 24.5 | 30.1 | 21.4 | 89.2 | NE quad. | 1 | 5.3 | Ci.-S. | | S.-Cu. | E | 13.2 | ≣ d a. p ● p. |
| 29 | 61.11 | 26.2 | 32.1 | 22.7 | 82.5 | NE | 1.7 | 1.8 | Ci. | | Cu. | NE | ------ | ≣ a. |
| 30 | 60.75 | 25.5 | 31.1 | 21.7 | 81 | NE quad. | 1.5 | 5.3 | Ci.-S. | SE | Cu., S.-cf. | ENE | ------ | ≣ a. |
| 31 | 58.79 | 26.5 | 32.2 | 22.3 | 83 | NE quad. | 1.5 | 7.7 | Ci.-S. | | S.-cf. | NE | 2.8 | d° p. |
| Mean | 760.09 | 25.1 | 31.4 | 21.1 | 84.1 | ------------ | 1.2 | 4.5 | ------------------ | | ------------------ | | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | | ------------------ | | 104.7 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 4.2 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | | | *mm.* | |
| 1 | 760.13 | 25.7 | 31 | 20.6 | 91.2 | ENE | 5 | 1.5 | Ci., A.-Cu. | | Cu. | | ------ | ≡° a. |
| 2 | 60.04 | 25 | 30.7 | 20 | 89.5 | NE | 5.4 | 3.7 | A.-Cu. | N | Cu. | NNE | ------ | ≡° a. |
| 3 | 60.44 | 23.2 | 27.1 | 20 | 91.5 | NE | 5.8 | 7.3 | A.-Cu. | NE | Cu.-N. | NE | 10.5 | d ● a. p. |
| 4 | 61.18 | 25.3 | 28.6 | 22.2 | 86.8 | ENE | 8.6 | 4.8 | Ci.-S. | | Cu. | ENE | ------ | |
| 5 | 61.24 | 25.8 | 29.6 | 21.7 | 85.8 | NE | 6.4 | .5 | Ci. | | Cu. | ESE | ------ | ≡° a. |
| 6 | 60.40 | 23.6 | 29.8 | 18.1 | 89.3 | E | 3.8 | 1.2 | Ci. | | Cu. | | ------ | ≡° a. |
| 7 | 60.22 | 25.1 | 29.9 | 19.5 | 85.8 | NE, E | 5.4 | 1 | Ci. | | Fr.-Cu. | E | ------ | ≡° a. |
| 8 | 60.09 | 25.5 | 30.2 | 22 | 88.5 | E quad. | 6.4 | 4 | Ci.-S. | | Cu. | ENE | ------ | d° a. |
| 9 | 59.83 | 26.7 | 31.5 | 22.4 | 88.5 | NE | 6.1 | 2.2 | A.-Cu. | | Cu. | NE | ------ | |
| 10 | 58.92 | 25.1 | 29.7 | 19.5 | 92.3 | ENE | --------- | 6.3 | Ci.-S. | | S.-Cu. | E | 2.5 | |
| 11 | 58.59 | 25 | 28.2 | 22.6 | 96.2 | NE quad. | 9.4 | 9.5 | Ci.-S. | | Fr.-N. | ENE | 46.2 | d ● ☈ a. p. |
| 12 | 60.36 | 27.1 | 31.3 | 24 | 85.3 | NE | 10.6 | 5.7 | Ci., A.-Cu. | | Cu. | ESE | ------ | |
| 13 | 61.01 | 27.2 | 31 | 24.6 | 84.7 | NE quad. | 10.6 | 4.8 | A.-Cu. | SE | Cu. | E | 1 | $d^2$ a. p° p. |
| 14 | 60.05 | 27.4 | 32.5 | 24 | 86.7 | NE quad. | 9.6 | 3.5 | Ci., Ci.-S. | | Cu. | ENE | ------ | ●° p. |
| 15 | 59.20 | 27.7 | 32 | 24.6 | 81.7 | NE | 10 | 1.5 | ------------------ | | Cu. | | ------ | |
| 16 | 59.26 | 27.4 | 32 | 24 | 85.3 | NE | 9.3 | 2.3 | ------------------ | | Cu. | E | ------ | ϟ° p. |
| 17 | 59.40 | 27.4 | 31.9 | 25 | 87.5 | NE | 7.9 | 2.3 | A.-Cu. | E | Cu. | NE | ------ | ●° p. |
| 18 | 59.51 | 27.2 | 32.1 | 23.4 | 88.8 | NE | 5.8 | 3 | Ci. | SE | Cu. | ENE | ------ | d° p. |
| 19 | 60.02 | 26.7 | 32.1 | 22 | 79 | NNE | 11.5 | 1.3 | ------------------ | | Cu. | NE | ------ | |
| 20 | 60.35 | 27.5 | 32.2 | 24.5 | 75.8 | NNE, NE | 15 | 2.7 | A.-Cu. | | Cu. | ENE | ------ | ≡° a. |
| 21 | 60.72 | 27 | 33 | 24 | 82.2 | NNE | 12.4 | 2.5 | ------------------ | | Cu.-N. | E | 1.3 | d° a. d p. |
| 22 | 60.84 | 27.7 | 33.3 | 24.3 | 79 | NNE | 10.9 | 2.7 | ------------------ | | Cu. | NE | ------ | |
| 23 | 60.61 | 27.1 | 33.5 | 22.3 | 82 | N, NNE | 10.1 | 3.2 | Ci. | | Cu. | NE, ENE | ------ | ∞ p. |
| 24 | 60.62 | 26.7 | 33.1 | 20.8 | 80.9 | NNE | 11.1 | 2.5 | Ci. | | Cu. | | 5.6 | ≡° a. ● p. |
| 25 | 60.91 | 26.9 | 32.6 | 22.9 | 84.6 | NNE | 12.9 | 5.2 | A.-Cu. | E | Cu., Cu.-N. | ENE | 13.9 | d p p. |
| 26 | 61.90 | 24.3 | 26.9 | 22 | 94.8 | NNE | 10.1 | 9.5 | Ci.-S. | | N., Fr.-N. | NE | 24.6 | d ● a. p. |
| 27 | 62.14 | 25.4 | 28.6 | 21.5 | 89.7 | NNE | 9.5 | 9 | Ci.-S. | | Cu. | NE | 20.5 | d ● a d p. |
| 28 | 61.55 | 26.2 | 31.1 | 23 | 88 | NNE, NE | 13.5 | 5.3 | Ci.-S. | | Cu.-N. | ENE | 10.4 | ● a. p. |
| 29 | 61.56 | 27.4 | 32 | 23.6 | 79.8 | NE | 19.1 | 5.3 | Ci. | | Cu.-N. | ENE | ------ | ●° a. d° p. |
| 30 | 61.19 | 27.4 | 31.7 | 25 | 75.7 | NNE | 17.2 | 3.2 | Ci. | | Cu. | ENE | ------ | |
| 31 | 59.22 | 27.6 | 32.1 | 24.7 | 73.7 | NNE | 15.3 | 4.3 | Ci. | | Cu. | NE | ------ | ϟ° p. |
| Mean | 760.37 | 26.3 | 31 | 22.5 | 85.5 | ------------ | 9.8 | 3.9 | ------------------ | | ------------------ | | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | | ------------------ | | 136.5 | |

## METEOROLOGICAL DATA, ETC.—Continued

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 760.67 | 24.7 | 28 | 20.2 | 83.7 | Variable. | 12.5 | 4 | A.-Cu. NE | Cu. N | ------ | Ω$^{0}$ a. |
| 2 | 60.52 | 24.8 | 25.6 | 22 | 80.5 | N quad. | 20.2 | 7.2 | A.-Cu. NE | S.-Cu. NE | 6.5 | d$^{0}$ ●$^{0}$ a. p. |
| 3 | 60.84 | 24.8 | 27.5 | 22 | 80.7 | NE | 18.4 | 7.7 | A.-Cu. ENE, E | S.-Cu. NE | 1.5 | ● d$^{2}$ a. ⌒$^{0}$ p. |
| 4 | 60.96 | 25.1 | 29 | 21.8 | 77.8 | NE | 10.1 | 7.7 | A.-Cu. E | S.-Cu. NE | ------ | |
| 5 | 61.14 | 24.8 | 29 | 20.4 | 77.7 | Variable. | 9.2 | 4.2 | Ci. | Cu. NW | ------ | |
| 6 | 60.50 | 24.1 | 28.5 | 18.8 | 74.7 | SW | 9.4 | 2.3 | Ci. | Cu. SE, NW | ------ | Ω$^{2}$ a. Φ$^{0}$ p. |
| 7 | 60.38 | 25.8 | 28.8 | 20.1 | 72.3 | NE | 17.6 | 3 | Ci., A.-S. | Cu. NE | ------ | |
| 8 | 60.35 | 25 | 28.7 | 18.4 | 73.7 | NE quad. | 15.7 | 3.3 | A.-Cu. NE, ENE | Cu. NE | ------ | Φ$^{0}$ p. |
| 9 | 60.18 | 26.2 | 29 | 23.5 | 69.3 | N | 14.8 | 2.8 | A.-Cu. E | S.-Cu. NE | ------ | Φ$^{0}$ p. |
| 10 | 59.33 | 25.7 | 28.7 | 22.6 | 73.5 | N | 14.4 | 5.3 | Ci. ESE | Cu. NE | ------ | Φ$^{0}$ p. |
| 11 | 59.58 | 26 | 27 | 23.1 | 82.7 | N | 27.1 | 8.5 | A.-Cu. NE, ENE | S.-Cu. NE | 48 | ●$^{0}$ a. ●$^{2}$ ⌈↯$^{0}$ p. |
| 12 | 60.58 | 25.4 | 26.3 | 23.3 | 88.8 | NE | 23.6 | 10 | Ci.-S. | N. NE | 45 | ⌈↯ ●$^{2}$ a. p. Φ$^{0}$ p. |
| 13 | 61.12 | 26.7 | 28.5 | 23.3 | 81.7 | N | 15 | 5.3 | A.-Cu. NE | S.-Cu. NE | ------ | Φ$^{0}$ p. |
| 14 | 60 34 | 26.3 | 29 | 21.4 | 81.3 | N | 13.2 | 6.2 | A.-Cu. NE quad. | S.-Cu. NE | ------ | Φ$^{0}$ a. p. Ω$^{0}$ ≡$^{0}$ a. |
| 15 | 59.36 | 26.7 | 29.8 | 22.1 | 77.3 | N | 11.9 | 4.8 | A.-Cu. NE, E | S.-Cu. NE | ------ | Φ$^{0}$ p. |
| 16 | 59.31 | 26.9 | 28.9 | 24.9 | 81.5 | N quad. | 14.4 | 5.3 | Ci. | Cu. NE | ------ | Φ$^{2}$ a. Φ$^{0}$ p. |
| 17 | 59.43 | 27.2 | 29.4 | 24.2 | 81.7 | N | 13.1 | 4.2 | Ci. | Cu. N | ------ | Φ$^{0}$ p. |
| 18 | 59.36 | 26.4 | 30 | 21.5 | 82.2 | SW | 8.8 | 3.3 | Ci.-Cu. NE, ENE | Cu. NW | ------ | Φ$^{0}$ a. p. ≡$^{0}$ a. |
| 19 | 60.13 | 26 | 29 | 22 | 82.3 | SW, N | 18.2 | 6.2 | Ci. | S.-Cu. NE | 1.3 | Ω$^{0}$ d$^{2}$ a. ⌈↯$^{0}$ ↯$^{0}$ p. |
| 20 | 60.78 | 25.7 | 27.4 | 23 | 82.5 | NW | 17.3 | 8.3 | A.-Cu. SE | S.-Cu. N, NE | 2.3 | ⌈↯ ⌒$^{0}$ a. ●$^{0}$ p. |
| 21 | 60.96 | 26.6 | 30.4 | 22.3 | 77.3 | NE | 14 | 5.3 | A.-Cu. N | Cu. NE | ------ | Φ$^{0}$ a. |
| 22 | 61.46 | 27 | 28.8 | 24.7 | 74.3 | NE | 20.5 | 6.5 | Ci. | Cu. NE | ------ | Φ$^{0}$ a. |
| 23 | 61.12 | 27.1 | 29.5 | 24.3 | 74.5 | NE | 16.5 | 6.3 | Ci.-S. | Cu. NE | ------ | |
| 24 | 60.95 | 27.4 | 29.9 | 24.8 | 75.3 | NE | 22.6 | 4.8 | Ci. | Cu. NE | ------ | |
| 25 | 61.22 | 27.4 | 31 | 24.4 | 75.7 | NE | 20.6 | 6.8 | A.-Cu. NE, ENE | S.-Cu. NE | 14.2 | d p. |
| 26 | 62.32 | 25.7 | 28.7 | 22.6 | 81.3 | NE | 22.3 | 9.3 | Ci. | S.-Cu., N. NE | 1.8 | a. ⟋$^{0}$ d$^{2}$ p. |
| 27 | 62.77 | 25.9 | 27.9 | 23.3 | 79.8 | NE | 20 | 7.8 | A.-Cu. ENE | S.-Cu. NE | .8 | |
| 28 | 62.14 | 26.6 | 29.5 | 23.6 | 79.8 | NE | 23.8 | 7 | A.-Cu. NE | Cu. NE | .5 | d$^{2}$ a. p. |
| 29 | 62.27 | 27.1 | 29 | 23.9 | 77.2 | NE | 32.1 | 7.5 | A.-Cu. E | S.-Cu. NE | .3 | d a. |
| 30 | 61.96 | 27 | 29 | 23.4 | 73.5 | NE | 32.3 | 5 | Ci. | Cu. NE | ------ | |
| 31 | 60.36 | 27 | 30 | 24.6 | 73.8 | NE | 27.1 | 4.2 | Ci. E | S.-Cu. NE | ------ | d a. |
| Mean | 760.72 | 26.1 | 28.8 | 22.6 | 78.3 | ------------ | 18 | 5.8 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 122.2 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 760.61 | 25 | 30.2 | 20.5 | 87.2 | NE quad. | --------- | 2.8 | Ci. | Cu. N | ------ | Ω$^{2}$ a. Ω$^{0}$ p. |
| 2 | 60.46 | 25.5 | 29.4 | 23.5 | 84 | NE | 13.5 | 7.8 | Ci.-S. | Cu. NNE | 1.6 | Ω$^{0}$ a. |
| 3 | 61.07 | 23 | 26.7 | 21.6 | 92.3 | E quad. | 12.4 | 10 | Ci.-S. | S.-Cu. NE | 33.8 | d ● a. p. |
| 4 | 61.36 | 23.6 | 27.7 | 21.3 | 86.7 | E | 11.1 | 8 | Ci.-S., Ci. | N. ESE | 14.5 | ● d a. |
| 5 | 61.60 | 24 | 29.5 | 20 | 84.8 | E quad. | 6.3 | 2.8 | A.-Cu. SW | Cu. E | ------ | Ω$^{2}$ a. p. |
| 6 | 60.57 | 23.4 | 29.3 | 18.9 | 86.7 | NE, E | 5.5 | .8 | Ci. | Cu. E | ------ | Ω$^{2}$ a. p. |
| 7 | 60.60 | 24.3 | 29.8 | 18.8 | 83.2 | NE | 7.7 | 3.2 | Ci. | Cu. NE | ------ | Ω$^{2}$ a. Ω$^{0}$ p. |
| 8 | 60.53 | 24.2 | 30.2 | 19.1 | 83.7 | NE | 6.3 | 2.2 | Ci. | Cu. NE | ------ | Ω a. p. |
| 9 | 60.43 | 23.8 | 30.4 | 18.5 | 86.2 | NE | 5.3 | 5.5 | A.-Cu. E | Cu. E | ------ | Ω$^{2}$ a. p. ≡ a. |
| 10 | 59.46 | 24.2 | 30.1 | 18.9 | 88.3 | NE | 4.7 | 5.5 | Ci.-S. | Cu. NE | .5 | Ω$^{2}$ a. ●$^{0}$ p. |
| 11 | 59.49 | 25.2 | 27.3 | 22.4 | 96.7 | NNE | 14.5 | 9 | Ci.-S. | N. NNE | 233.5 | Ω d a. ●$^{2}$ ⌈↯$^{2}$ p. |
| 12 | 60.74 | 24.7 | 26.3 | 23.4 | 96.2 | ENE | 14.8 | 8 | Ci. | N. ENE | 110.7 | ⌈↯$^{2}$ ⟋$^{2}$ ●$^{2}$a ≡$^{0}$ Ω p. |
| 13 | 61.44 | 25.7 | 30.4 | 22 | 91.7 | ENE | 6.9 | 5 | Ci. | Cu. E | 1 | Ω$^{2}$ ●$^{0}$ a. d$^{0}$ p. |
| 14 | 60.48 | 26.4 | 30.8 | 22.5 | 89.3 | NE, ENE | 8 | 6.2 | Ci., Ci.-S. | Cu. E quad | .8 | Ω d$^{0}$ a. ●$^{0}$ p. |
| 15 | 59.50 | 26.6 | 31.1 | 23.3 | 87.2 | E | 7.8 | 6.2 | Ci. | Cu. E | ------ | Ω a. |
| 16 | 59.49 | 26.3 | 31.1 | 22.9 | 87.7 | ENE, NE | 5.5 | 5.5 | Ci.-S., Ci. | Cu. E | 2.1 | d a. ● ⊤ Ω$^{2}$ p. |
| 17 | 59.58 | 26 | 31.2 | 22.4 | 90 | ENE | 6 | 2.2 | Ci. | Cu. E | ------ | Ω$^{2}$ a. ⊤ Ω p. |
| 18 | 59.46 | 26.5 | 31.4 | 22.7 | 87.5 | E quad. | 6.4 | 2.2 | Ci. | Cu. E | ------ | Ω a. p. |
| 19 | 60.45 | 26.5 | 31.7 | 22.2 | 86.7 | ENE | 9.4 | 5.5 | Ci. | Cu. E | 3 | Ω a, p p. |
| 20 | 60.85 | 27 | 30.6 | 24.3 | 84.5 | ENE | --------- | 8.3 | Ci.-S. | Cu. ENE | ------ | d$^{0}$ ● a. |
| 21 | 61.19 | 27.2 | 31.2 | 24.8 | 77.5 | ENE | --------- | 5.3 | Ci. | Cu. E | ------ | |
| 22 | 61.47 | 26.6 | 31.4 | 22.6 | 81.5 | ENE | 9.2 | 5.7 | Ci. | Cu. E | ------ | Ω$^{0}$ p. |
| 23 | 61.30 | 25.7 | 31.2 | 21.2 | 86.3 | NNE | 6.9 | 5.3 | Ci. | Cu. NE | ------ | Ω$^{0}$ p$^{0}$ a. |
| 24 | 61.16 | 27.3 | 31.7 | 23.3 | 81 | NE quad. | 11.5 | 5.3 | Ci. | Cu. NE | .5 | ●$^{0}$ p. |
| 25 | 61.40 | 26.8 | 31.3 | 22.6 | 81 | ENE | 13.2 | 7.8 | Ci. | Cu. NE | 48.7 | ●$^{0}$ a. p. |
| 26 | 62.50 | 24.2 | 27.8 | 22.4 | 90.7 | E quad. | 12.9 | 10 | Ci.-S. | S.-Cu. ENE | 33.3 | ● a. p. |
| 27 | 63.04 | 24.2 | 26.8 | 22.2 | 90.8 | E quad. | 8.5 | 8.7 | Ci.-S. | S.-Cu. NE | 62 | ● a. p. ≡ Ω p. |
| 28 | 62.27 | 26.9 | 30.4 | 23.4 | 86.3 | E quad. | 15.4 | 7.3 | Ci.-S., Ci. | Cu. NE | 5.5 | ● a. p. |
| 29 | 62.57 | 26.9 | 30 | 25.5 | 82.5 | NE | 23.1 | 6 | Ci. | Cu. NE | ------ | |
| 30 | 62.17 | 27.1 | 30.8 | 25.2 | 81.5 | NE | 20.2 | 4.5 | Ci. | Cu. NE | ------ | |
| 31 | 60.38 | 27 | 30.8 | 25 | 78.7 | NE | 17.4 | 5.2 | Ci. | Cu. NE | ------ | p$^{0}$ a. d$^{0}$ p. |
| Mean | 760.89 | 25.5 | 30 | 22.2 | 86.4 | ------------ | 10.4 | 5.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 551.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi=15°\ 22'$ N; $\lambda=120°\ 53'$ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | | Clouds. Prevailing form and its direction. Lower. | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Perct.* | | *0–12.* | *0–10.* | | | | | *mm.* | |
| 1 | 760.58 | 25.1 | 32 | 19.6 | 72 | NNW | 2.2 | 3.3 | Ci. | | Cu. | NE | ------ | Ω² ≡° a. |
| 2 | 60.30 | 24.2 | 29.3 | 21 | 71.5 | ENE, NW | 1.3 | 6.3 | A.-Cu. | SE | Cu. | NNW, NE | ------ | |
| 3 | 60.35 | 24.4 | 29.4 | 20.6 | 69.2 | NE | 2.2 | 6.2 | A.-Cu. | SE | Cu. | NE | ------ | d° p. |
| 4 | 60.67 | 23.6 | 27.1 | 20 | 75 | NE, E | 3.2 | 7.2 | A.-Cu. | SE | N. | E | ------ | ↙° p° ⌒° p. |
| 5 | 60.50 | 24.7 | 31 | 20.4 | 69.3 | E | 2.2 | 4.2 | A.-Cu. | | Fr.-Cu. | E | ------ | Ω° a. |
| 6 | 59.85 | 25.1 | 31.7 | 18.4 | 68.4 | NE, ENE | 1 | 3.2 | A.-Cu. | SE | Cu. | N | ------ | Ω² a. |
| 7 | 59.84 | 25.4 | 30.9 | 20 | 63.5 | ESE | 1.7 | 5.3 | A.-Cu. | E, NE | Cu. | NE | ------ | Ω ≡° a. |
| 8 | 59.92 | 24.4 | 31 | 17.9 | 65 | E quad. | 2.3 | 2.5 | A.-Cu. | NE | Fr.-Cu. | NE | ------ | Ω ≡° a. |
| 9 | 59.79 | 24.2 | 30.7 | 17 | 70.3 | NW, E | 2 | 3.5 | A.-Cu. | | Cu. | NE | ------ | Ω² ≡° a. Ω° p. |
| 10 | 58.85 | 25 | 32.2 | 17.5 | 68 | NE | 1 | 3 | Ci. | SE, ESE | Cu. | NE | ------ | Ω² ≡° a. ⊥² p. |
| 11 | 59.31 | 26.6 | 32.7 | 19.5 | 68.5 | NW, E | 2.8 | 5.5 | A.-Cu. | NE | Cu. | E | ------ | Ω a. ↙° p. |
| 12 | 60.56 | 24.6 | 29.6 | 21.5 | 80.8 | E | 2.3 | 8 | Ci.-S. | | N. | E | 1 | d° a. d² p |
| 13 | 60.57 | 26.2 | 31.6 | 20.9 | 70 | E | 2.3 | 3.3 | A.-Cu. | SE | Cu. | E | ------ | Ω a. p. |
| 14 | 59.89 | 26.3 | 32.2 | 21 | 69.8 | E | 2.2 | 2.8 | A.-Cu. | SE | Cu. | E | ------ | Ω ≡° a. Ω° p. |
| 15 | 58.70 | 26.4 | 34.1 | 20 | 69.8 | ENE, E | 1.7 | 3.5 | A.-Cu., Ci. | | Cu. | E, ENE | ------ | Ω² ≡° a. |
| 16 | 58.82 | 27.5 | 34.3 | 19.5 | 68.3 | NE | 1 | 3.7 | Ci. | | Cu. | NE | ------ | Ω a. |
| 17 | 59.08 | 27.4 | 35.4 | 22.1 | 72.8 | Variable | 2.3 | 6.2 | A.-Cu. | SE | Cu. | E | 4.1 | ● ⌈↯ p. |
| 18 | 59.23 | 26.6 | 33.7 | 22 | 77.2 | NNW | 1.5 | 5 | A.-Cu. | SE | Cu. | NE | ------ | p° p. |
| 19 | 59.96 | 26.6 | 32.6 | 22.5 | 73.3 | E. NE | 1.7 | 5.8 | A.-Cu. | SE | Cu. | E | ------ | Ω ≡° a. ⊤ < p. |
| 20 | 60.64 | 26 | 30.6 | 22.1 | 72.8 | E quad. | 1.5 | 7 | A.-Cu. | SE | Cu. | NE | ------ | |
| 21 | 60.58 | 26.4 | 30.8 | 21.8 | 71.3 | ESE | 2.2 | 5 | Ci. | | Cu. | E | ------ | ≡° a. |
| 22 | 60.75 | 26.2 | 32.3 | 20.6 | 70.7 | E, NW | 1.7 | 4 | Ci. | | Cu. | E | ------ | Ω ≡° a. |
| 23 | 60.56 | 27 | 34 | 20.6 | 69.5 | E quad. | 1.2 | 5 | Ci. | | Cu. | ENE | ------ | Ω ≡° a. |
| 24 | 60.61 | 27 | 32.7 | 23 | 73 | E | 2 | 5 | Ci. | | Cu. | E quad. | 1.5 | Ω ≡° a. ⊤ ● p. |
| 25 | 61.06 | 25.8 | 31.3 | 21 | 76.3 | NE, E | 2.5 | 6.7 | Ci.-S. | SE | Cu. | NE | .3 | Ω ≡° ↙° a. d° p. |
| 26 | 61.76 | 25.9 | 30.7 | 22.5 | 73.5 | NE, ESE | 2.3 | 8.7 | Ci.-S. | SE | N. | ENE, N | 1 | |
| 27 | 62.36 | 25.7 | 30.3 | 22.4 | 78.7 | E | 1.7 | 8.7 | Ci.-S. | SE | N. | E | ------ | d² a. < p. |
| 28 | 61.89 | 26.2 | 30.6 | 21.4 | 74.5 | ENE | 2 | 5.2 | A.-Cu. | ESE | S.-Cu. | NE | 1.5 | Ω a. ● p. |
| 29 | 61.92 | 26.2 | 31.7 | 22 | 68.3 | NE, E | 3.2 | 4.5 | A.-Cu. | ESE | Cu. | ENE | ------ | Ω a. ↙° p. |
| 30 | 61.40 | 26.2 | 31.2 | 21.5 | 64.3 | E quad. | 3.7 | 3.8 | A.-Cu. | ESE | Cu. | E | ------ | Ω a. ↙° p. |
| 31 | 59.92 | 25.7 | 32.7 | 19.5 | 67.3 | ESE | 2 | 3.3 | Ci. | | Fr.-Cu. | NE | ------ | Ω² a. |
| Mean | 760.33 | 25.8 | 31.6 | 20.6 | 71.1 | ------ | 2 | 5 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 9.4 | |

### DAGUPAN.

[$\phi=16°\ 03'$ N; $\lambda=120°\ 20'$ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | | | *mm.* | |
| 1 | 760.93 | 24.6 | 28.1 | 22.7 | 85.5 | NW | 22.2 | 3.8 | ------ | | Cu., S.-Cu. | | ------ | |
| 2 | 60.22 | 24.6 | 30.9 | 19.4 | 84.3 | NW | 10 | 6 | A.-Cu. | | S.-Cu. | S | ------ | ≡° a. |
| 3 | 59.76 | 25.2 | 33.5 | 20.1 | 79 | Variable | 11.2 | 4.2 | A.-Cu. | | S.-Cu. | SE | ------ | |
| 4 | 59.85 | 25.9 | 32.9 | 20.6 | 76.5 | SE, SSE | 18.3 | 3.2 | A.-Cu. | | S.-Cu. | SSE | ------ | |
| 5 | 59.87 | 26.5 | 33.9 | 21 | 74 | SE | 14.2 | 2.8 | Ci. | | Cu., S. Cu. | | ------ | |
| 6 | 59.66 | 25.8 | 33.3 | 19.5 | 80.3 | SE, NW | 12.4 | 4 | Ci. | | Cu., S.-Cu. | | ------ | ⊕° p. |
| 7 | 59.50 | 26.1 | 31.1 | 21.2 | 84 | NW quad. | 10.4 | 3.5 | ------ | | Fr.-Cu. | E | ------ | ≡° a. |
| 8 | 59.66 | 25.7 | 33.4 | 20 | 72.3 | NW, SE | 11.4 | 2.7 | ------ | | S.-Cu. | | ------ | |
| 9 | 59.56 | 25.7 | 34.4 | 19 | 75.5 | Variable | 10.5 | 2 | ------ | | Cu., S.-Cu. | | ------ | ≡° a. |
| 10 | 58.98 | 25.9 | 32.4 | 20 | 75.3 | NW, SE | 12.3 | 2 | Ci. | | Cu., S.-Cu. | | ------ | |
| 11 | 59.09 | 25.9 | 30.6 | 20 | 80.2 | W quad. | 10.4 | 2 | Ci. | | S.-Cu. | | ------ | Ω a. |
| 12 | 59.91 | 27.1 | 36.3 | 23.1 | 73.2 | SE quad. | 15.4 | 5.5 | A.-Cu. | | S.-Cu. | | 2.3 | d a. ⌒ ⊕ p° p. |
| 13 | 60.11 | 27.3 | 36.6 | 22.8 | 78.8 | Variable | 13.6 | 1 | ------ | | Cu., S.-Cu. | | ------ | |
| 14 | 59.58 | 26.8 | 35.3 | 21.3 | 78.3 | Variable | 10.9 | 1 | ------ | | Cu., S.-Cu. | | ------ | |
| 15 | 58.42 | 26.6 | 34.2 | 20.2 | 81.7 | Variable | 11.1 | 1.8 | ------ | | Cu., S.-Cu. | | ------ | |
| 16 | 58.76 | 27.4 | 35.9 | 21.4 | 80.8 | Variable | 10.7 | 2.7 | ------ | | Cu., S.-Cu. | | ------ | |
| 17 | 58.88 | 27.7 | 33 | 23.3 | 79.8 | N, NW | 12 | 2.7 | Ci., Ci.-S. | | Cu., S.-Cu. | | ------ | < ⊕ p. |
| 18 | 59.38 | 26.9 | 31.3 | 23.6 | 84.5 | NW | 14.9 | 3.8 | Ci. | | S.-Cu. | W | ------ | ⊤° p. |
| 19 | 60.01 | 26.9 | 30.5 | 23.9 | 82.3 | NW | 14.7 | 2.3 | ------ | | Cu., S.-Cu. | | ------ | ⊕ a. |
| 20 | 59.86 | 27.7 | 35 | 22.7 | 72.5 | SE quad. | 11.2 | 4.5 | A.-Cu. | | S.-Cu. | | ------ | ⌈↯° p. |
| 21 | 60.14 | 28.1 | 35.6 | 22.1 | 74.7 | Variable | 11 | 3.5 | ------ | | Fr.-Cu. | S | ------ | |
| 22 | 60.61 | 27.6 | 34.4 | 22.4 | 75.3 | NW | 12 | 1.3 | ------ | | S.-Cu. | | ------ | ∞ p. |
| 23 | 60.55 | 27.2 | 32.4 | 23 | 79 | N quad. | 14 | 4.3 | Ci. | | S.-Cu. | NE | ------ | ∞ ⌈↯ p. |
| 24 | 60.34 | 26.5 | 35.2 | 23 | 84.8 | Variable | 10.5 | 6.3 | Ci. | | S.-Cu., N. | SE, SW | 12.5 | ⊤ ⌈↯ d° p ↘ p. |
| 25 | 60.94 | 26.4 | 34.1 | 22.4 | 84.2 | Variable | 7.6 | 6.5 | A.-Cu. | | S.-Cu. | E | ------ | |
| 26 | 61.29 | 27.3 | 35.4 | 23.6 | 79 | S, SE | 11.3 | 7.5 | A.-Cu. | | S.-Cu. | | 2.8 | ⌈↯ d² p. |
| 27 | 62.10 | 26.2 | 32.9 | 23 | 82.8 | S quad. | 10 | 8.3 | A.-Cu. | | N. | SW | 3.3 | < ⊤ d² p p. |
| 28 | 61.36 | 27.7 | 36.1 | 21.6 | 76.3 | S quad. | 10.3 | 5.2 | A.-Cu. | | Cu., S.-Cu. | | ------ | d° ⌒ p. |
| 29 | 61.22 | 27.6 | 35.5 | 23.5 | 76.2 | Variable | 14.5 | 1.5 | ------ | | Cu., S.-Cu. | | ------ | |
| 30 | 61.04 | 26.9 | 36.6 | 21.1 | 75.3 | NNW | 13.2 | .8 | Ci. | | Cu., S.-Cu. | | ------ | |
| 31 | 59.56 | 27.4 | 36.6 | 20.1 | 74.8 | SE, S | 10.4 | 2.7 | Ci. | | S.-Cu. | | ------ | |
| Mean | 760.04 | 26.6 | 33.8 | 21.7 | 78.7 | ------ | 12.3 | 3.5 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 20.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N ; $\lambda$=119° 53′ E ; barometer above sea, 7.5 meters ; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 761.22 | 24.8 | 28.8 | 22.9 | 78.8 | NNE, N | 4.7 | 8.3 | Ci.-S. | S.-Cu. NNE, N | ------ | |
| 2 | 60.12 | 24.7 | 30.1 | 20.6 | 76.8 | N quad. | 2.8 | 5.5 | Ci.-S., Ci. | S.-Cu. NNE | ------ | |
| 3 | 59.67 | 25.4 | 33.4 | 19.9 | 77.3 | SE | 2.3 | 7.8 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 4 | 59.60 | 26.3 | 33.6 | 20.9 | 69 | SE quad. | 3.5 | 8.3 | Ci.-S. | S.-Cu. SSE | ------ | p$^{\circ}$ ⌒$^{2}$ p. |
| 5 | 59.72 | 25.9 | 33.9 | 21.6 | 70.7 | S | 3.2 | 5.8 | Ci. | S.-Cu. | ------ | Ω a. |
| 6 | 59.57 | 26 | 31.9 | 21.7 | 69.5 | Variable | 2.8 | 4.8 | Ci. | S.-Cu., Cu. | ------ | Ω$^{\circ}$ a. |
| 7 | 59.54 | 25.8 | 29.9 | 21.1 | 77.8 | N | 2.2 | 7.8 | Ci.-S. | S.-Cu. NNE | ------ | Ω a. |
| 8 | 59.53 | 25.7 | 32.8 | 20.4 | 70.7 | SSE | 2.3 | 4 | Ci.-S., Ci. | S.-Cu., Cu. | ------ | Ω ≡$^{\circ}$ a. |
| 9 | 59.38 | 25.4 | 31.5 | 21.6 | 79.5 | S quad. | 2 | 6.7 | Ci.-S. | Cu. NW | ------ | Ω a. |
| 10 | 58.92 | 26 | 31.6 | 19.9 | 72.7 | Variable | 2.5 | 5.2 | Ci.-S. | S.-Cu., Cu. | ------ | Ω a. |
| 11 | 59.16 | 26.7 | 31 | 23.1 | 74.2 | NNE | 3 | 5.8 | Ci.-S. | Cu. | ------ | |
| 12 | 59.53 | 28 | 35.9 | 22.1 | 66.3 | SSE | 2.7 | 10 | Ci.-S. | S.-Cu. | ------ | Ω$^{\circ}$ a. p$^{\circ}$ p. |
| 13 | 59.98 | 28 | 34.2 | 24.9 | 70.2 | NNE | 3.3 | 3.7 | Ci.-S. | S.-Cu. | ------ | |
| 14 | 59.46 | 26.6 | 34.9 | 21.5 | 77.3 | Variable | 1.8 | 1 | Ci. | S.-Cu. | ------ | Ω$^{2}$ ∞$^{\circ}$ ≡$^{\circ}$ a. |
| 15 | 58.50 | 26.5 | 33.9 | 21.4 | 74.8 | S | 2.3 | 2 | Ci. | S.-Cu ,Cu. | ------ | Ω ≡$^{\circ}$ a. |
| 16 | 58.73 | 26.7 | 33.8 | 21.4 | 76.7 | Variable | 2.2 | 2.8 | Ci. | S.-Cu. | ------ | Ω$^{2}$ ≡$^{\circ}$ a. |
| 17 | 59.04 | 26.8 | 31.5 | 22 | 79.5 | S quad. | 2.2 | 5.8 | Ci. | S.-Cu. | ------ | Ω ≡$^{\circ}$ a. ☇ p. |
| 18 | 59.49 | 26.6 | 31.8 | 22.9 | 79.5 | NW quad. | 2.7 | 6.2 | Ci. | Cu. NW | ------ | Ω ≡$^{\circ}$ a. |
| 19 | 60.06 | 26.8 | 31 | 22.3 | 75.3 | NNE | 3.3 | 4.2 | Ci.-S. | S.-Cu , Cu. NNE | ------ | |
| 20 | 59.83 | 26.9 | 34.7 | 20.9 | 73 | SSE, W | 2.3 | 4.3 | Ci.-S. | S.-Cu. | 0.3 | Ω$^{2}$ ∞$^{\circ}$ ≡$^{\circ}$ a. ☈ p. |
| 21 | 60.15 | 27.2 | 34.3 | 21.2 | 73.8 | S quad. | 2.7 | 4.8 | Ci.-S. | S.-Cu., Cu. | ------ | Ω a. |
| 22 | 60.63 | 27.6 | 32.9 | 24 | 74.5 | NE quad. | 3 | 4.2 | Ci.-S. | S.-Cu., EbyN | ------ | Ω$^{\circ}$ a. |
| 23 | 60.66 | 27.6 | 30.6 | 25.8 | 74.7 | N | 4.2 | 7.7 | Ci.-S. | S.-Cu., Cu. NNE | ------ | |
| 24 | 60.23 | 27.1 | 32.4 | 23.5 | 79 | S quad. | 2.2 | 8.3 | Ci.-S., A.-Cu. | Cu. S | 16.2 | Ω$^{\circ}$ a. ⊤ ☈ ● p. |
| 25 | 60.78 | 26.8 | 31.4 | 23.7 | 80 | NNE | 2 | 9.2 | Ci.-S. | S.-Cu., N.-cf. | .1 | ⊤ d p. |
| 26 | 61.17 | 26.6 | 34.1 | 22.3 | 77.5 | S | 2.5 | 9.2 | Ci.-S. | S.-Cu. | 15 | Ω a. ☈ ● p. |
| 27 | 62 | 26.4 | 32.1 | 22.4 | 79.7 | SSE | 2.5 | 10 | Ci.-S. | S.-Cu. | 25.4 | ⊤ ☈ ●$^{\circ}$ p. |
| 28 | 61.36 | 26.8 | 33.4 | 22.1 | 79.5 | SSE | 2.7 | 7.5 | A.-Cu. | S.-Cu. | ------ | ☈$^{\circ}$ p. |
| 29 | 61.22 | 27 | 33.3 | 22.9 | 76.2 | S | 2.5 | 2.8 | Ci. | S.-Cu. | ------ | |
| 30 | 60.97 | 26.9 | 34.2 | 22.5 | 72.3 | NNE | 3.3 | 2.8 | Ci. | S.-Cu., Cu. | ------ | Ω$^{\circ}$ a. |
| 31 | 59.48 | 27.2 | 33.9 | 22.5 | 71 | SSE | 2.7 | 3.2 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| Mean | 759.99 | 26.5 | 32.7 | 22.1 | 75.1 | ------------ | 2.7 | 5.8 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 57 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N ; $\lambda$=120° 36′ E ; barometer above sea, 1,512.5 meters ; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 637.09 | 15.4 | 21.5 | 12.6 | 86 | N | 10.2 | 5.3 | Ci. | Cu. | ------ | Ω$^{2}$ a. ≡$^{\circ}$ a. p. |
| 2 | 36.62 | 16 | 21.8 | 12 | 71 | E, SE | 12.7 | 4.9 | Ci., A.-Cu. | S.-Cu. S | ------ | Ω$^{2}$ a. |
| 3 | 36.49 | 15.5 | 20.3 | 11.5 | 78.2 | E | 17.6 | 6.7 | Ci. | S.-Cu. S | ------ | Ω a. |
| 4 | 36.62 | 15.6 | 21.8 | 12 | 83.5 | E | 18.5 | 7.3 | Ci. | S.-Cu. S, SW | ------ | Ω a. |
| 5 | 36.92 | 16.3 | 22.1 | 12.8 | 84.2 | E | 14.8 | 6.3 | Ci. | S.-Cu. SSE, SE | ------ | Ω a. |
| 6 | 36.72 | 16.4 | 23.7 | 12.3 | 79.5 | W | 15.2 | 2.9 | A.-Cu. | Cu. | ------ | Ω a. ≡$^{\circ}$ p. |
| 7 | 36.63 | 16 | 22 | 13.5 | 90.8 | E | 12.3 | 7.1 | ------------------ | S.-Cu. EbyS | ------ | Ω ≡$^{\circ}$ a. ≡$^{2}$ p. ∞ |
| 8 | 36.63 | 16.4 | 22.2 | 12.6 | 85.5 | NE, W | 12.6 | 6.3 | ------------------ | S.-Cu. ESE | ------ | Ω$^{2}$ ≡$^{\circ}$ a. ∞ a. p. |
| 9 | 36.54 | 16.2 | 22.3 | 12.1 | 83.7 | W | 14 | 4.7 | ------------------ | S.-Cu. SE, E | ------ | Ω$^{2}$ a. ≡ p. ∞ |
| 10 | 36.14 | 16.6 | 23 | 11.1 | 82 | E | 16.7 | 3.7 | A.-Cu., Ci. | Cu. | ------ | Ω$^{2}$ ≡$^{2}$ ∞ a. |
| 11 | 36.77 | 18.9 | 25.1 | 13 | 63.3 | E | 22 | 1.7 | Ci. | Cu. | ------ | Ω$^{\circ}$ a. ∞ a. p. |
| 12 | 37.60 | 18.8 | 25.3 | 15.8 | 70.3 | E | 26 | 8.9 | A.-Cu. SSW, S | Cu., Fr.-N. | ------ | d$^{\circ}$ p. |
| 13 | 38.02 | 18.7 | 25.3 | 15.4 | 77.5 | E | 19.5 | 3.1 | A.-Cu. | S.-Cu. SSE | ------ | |
| 14 | 37.39 | 18.7 | 25.1 | 14.6 | 76.3 | E, W | 17.9 | 2.7 | ------------------ | Fr.-Cu. WSW | ------ | ∞ p. |
| 15 | 36.51 | 18.8 | 24.8 | 15.1 | 84 | NE | 12.9 | 5.1 | Ci. | S.-Cu E | ------ | Ω a. ∞ p ≡$^{\circ}$ |
| 16 | 36.62 | 19.3 | 25.7 | 14.9 | 75.7 | E | 14.3 | 3.6 | ------------------ | Cu. W | ------ | Ω ≡$^{\circ}$ a. ∞ a. p. |
| 17 | 36.89 | 18 | 25.2 | 15 | 89.7 | E, W | 13.8 | 5.4 | Ci. | S.-Cu. ssw, wsw | ------ | Ω$^{2}$ ≡$^{\circ}$ a. ∞ a. p. |
| 18 | 36.96 | 17.7 | 25.5 | 14.8 | 87.5 | W | 14.1 | 6.7 | Ci. | Cu.-N. NW | ------ | Ω$^{2}$ a. ∞$^{2}$ ≡ p. |
| 19 | 37.30 | 17.2 | 23.7 | 14.5 | 89.8 | E, W | 12.8 | 6.1 | ------------------ | Cu. | ------ | Ω ⊤ ∞$^{2}$ ≡$^{2}$ |
| 20 | 37.42 | 17.6 | 25.3 | 13.8 | 83 | E | 15.5 | 4.4 | A.-Cu. | Cu. NW | ------ | Ω ⊤ ≡ ∞$^{2}$ |
| 21 | 37.72 | 18.1 | 23.6 | 14 | 81.5 | E | 13.3 | 5 | ------------------ | Cu. SW | ------ | Ω$^{2}$ a. ☈ p. ∞ |
| 22 | 38.08 | 17.9 | 23.8 | 14.6 | 79.2 | E, W | 10.5 | 6.1 | ------------------ | Cu., S.-Cu. | 0.5 | Ω a. ☈ p p. ≡ ∞ |
| 23 | 38.05 | 18.5 | 23.8 | 15.1 | 83 | W | 7.9 | 6.6 | ------------------ | S.-Cu. NE | ------ | Ω a. d ⊤ p. ≡ ∞ |
| 24 | 37.82 | 16.8 | 21.9 | 14.6 | 83.8 | E | 13.6 | 7.1 | ------------------ | S.-Cu. NNE | 5.3 | Ω ≡ ∞$^{2}$ a. ⊤ ● p. |
| 25 | 38.14 | 16.5 | 22.7 | 14.3 | 88.7 | E | 12.4 | 7.3 | Ci., A.-Cu. | Cu.-N. E | 29.2 | ●$^{2}$ ⌒ p. |
| 26 | 38.48 | 16.3 | 22.4 | 13.9 | 88.2 | E | 21.4 | 8.6 | A.-Cu. | N. | 11.7 | ● p. ∞ a. p. |
| 27 | 39.05 | 17.1 | 22.2 | 14 2 | 83.5 | E | 12.1 | 9.4 | A.-Cu. | S.-Cu. SE, ESE | .3 | p a. ⊤$^{\circ}$ ⌒ ≡$^{\circ}$ p. |
| 28 | 38.78 | 17.1 | 22.4 | 14.1 | 85.5 | E | 16.8 | 7 | A.-Cu. | S.-Cu. NE | 31.5 | ≡$^{\circ}$ ☈ ●$^{2}$ p. |
| 29 | 38.78 | 18 | 24.1 | 14 | 72.7 | E | 17.9 | 2.6 | ------------------ | Cu. | ------ | |
| 30 | 38.61 | 18.1 | 25.2 | 13.4 | 85 | E | 14 | 1.1 | Ci. | Cu. | ------ | |
| 31 | 37.14 | 17.9 | 24.2 | 13.5 | 81.2 | W | 13.2 | 3.3 | Ci. | Cu. SE | ------ | Ω$^{2}$ a. ∞$^{\circ}$ p. |
| Mean | 637.37 | 17.3 | 23.5 | 13.7 | 81.1 | ------------ | 15 | 5.4 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ----- | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 81.5 | |

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[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 15 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 761.23 | 21.9 | 26.5 | 17 | 73.2 | N quad. | 16.7 | 0 | Ci.-S. | Cu. NNE | ------ | Ω ≡° a. |
| 2 | 60.10 | 23.2 | 30.5 | 16 | 66.3 | NNE | 7.3 | .5 | Ci.-S. | S.-Cu. | ------ | Ω² ≡ a. |
| 3 | 59.83 | 25 | 31.9 | 21 | 57 | Variable | 11.4 | 2.5 | A.-Cu. S | S.-Cu. | ------ | |
| 4 | 59.73 | 25.9 | 31 | 22.5 | 62.2 | Variable | 10.7 | 2.8 | Ci.-S. | S.-Cu. | ------ | |
| 5 | 59.82 | 25.9 | 31.7 | 21.6 | 71 | Variable | 6.3 | 5.7 | Ci.-S. | S.-Cu. S | ------ | ⊕ p. |
| 6 | 59.78 | 25.8 | 31.4 | 21.5 | 67.3 | Variable | 6.1 | 4.2 | Ci.-S. | Cu. | ------ | ≡° d° a. |
| 7 | 59.46 | 25.4 | 31.5 | 20 | 71 | N quad. | 9.3 | 0 | Ci.-S., A.-Cu. | Cu. NEbyN | ------ | |
| 8 | 59.48 | 26 | 30.5 | 20.3 | 74.5 | Variable | 8.6 | 3.5 | Ci.-S. | S.-Cu., Cu. | ------ | |
| 9 | 59.29 | 26.5 | 30.6 | 23 | 75.7 | S quad. | 6.7 | 5.2 | A.-Cu. SSE | Cu. SW | ------ | ⊕ p. |
| 10 | 59.06 | 25.6 | 30.7 | 21.8 | 77.2 | Variable | --------- | 4.3 | A.-Cu., Ci.-S. | Cu. | ------ | Ω d° a. |
| 11 | 59 | 27 | 33.5 | 19.5 | 63.8 | Variable | 8.9 | .2 | A.-Cu. | Cu. | ------ | Ω ≡° a. |
| 12 | 59.65 | 27.4 | 32.5 | 23.5 | 69 | Variable | --------- | 6.5 | Ci.-S. | Cu. | 1.5 | ⛈ d° ●° p. |
| 13 | 60.23 | 26.7 | 32.9 | 21.5 | 77 | N quad. | 10.8 | 2 | Ci.-S., A.-Cu. | S.-Cu., Cu. | ------ | |
| 14 | 59.59 | 26.8 | 32.5 | 21.5 | 76.2 | Variable | 7.6 | 0 | ------------------ | Cu. | ------ | Ω a. |
| 15 | 58.62 | 26.5 | 32.8 | 21.8 | 77.5 | Variable | 6.7 | .3 | A.-Cu. | Cu. | ------ | Ω ≡° a. |
| 16 | 58.94 | 27.3 | 32.5 | 22 | 72.7 | Variable | 6.7 | 0 | A.-Cu. | Cu. | ------ | |
| 17 | 59.08 | 26.8 | 32.8 | 22.2 | 73.5 | Variable | 8.8 | 0 | Ci.-S., A.-Cu. | Cu. | ------ | Ω ≡° a. |
| 18 | 59.59 | 26.2 | 32.8 | 22 | 75 | N quad. | 9.9 | .7 | Ci.-S. | Cu. | ------ | ≡° a. |
| 19 | 60 | 26.5 | 32 | 21.4 | 67.2 | N quad. | 10.6 | 0 | Ci.-S. | Cu. | ------ | ⊕ Ω ≡ a. |
| 20 | 59.95 | 27 | 31.5 | 23.6 | 67 | SE quad. | 9.2 | 2.7 | Ci.-S. | Cu. | ------ | |
| 21 | 60.33 | 26.7 | 32 | 23 | 72.2 | S quad. | 8.3 | 1.8 | Ci.-S. | S.-Cu., Cu. | ------ | ⊕ a. |
| 22 | 60.70 | 26.5 | 31.7 | 22 ? | 72.7 | N quad. | 12.2 | 0 | Ci.-S. | Cu. | ------ | Ω ≡° a. |
| 23 | 60.48 | 25.9 | 32.1 | 22.3 | 74.3 | N quad. | 16.3 | 0 | Ci.-S. | Cu. | ------ | ≡° a. p. |
| 24 | 60.38 | 26.6 | 31.6 | 22 | 71.5 | N quad. | 7 | 3.5 | Ci.-S. | S.-Cu. | ------ | Ω a. ≡° a. p. |
| 25 | 60.84 | 26.6 | 33.5 | 21.5 | 72.3 | NW quad. | 6.2 | 6.2 | A.-Cu. | Cu. | 2 | d° ●° p. |
| 26 | 61.22 | 27.6 | 33.6 | 21.5 | 58.7 | NE | 8.1 | 2.5 | A.-Cu. | Cu. | ------ | ≡° a. |
| 27 | 62.04 | 27.1 | 32.8 | 23.5 | 66 | Variable | 6.6 | 3.7 | Ci.-S., A.-Cu. | S.-Cu., Cu. | ------ | ≡° a. ϟ° p. |
| 28 | 61.37 | 27.9 | 33.5 | 23.3 | 66.2 | Variable | 7.3 | .7 | A.-Cu. | S.-Cu., Cu. | ------ | |
| 29 | 61.13 | 27.8 | 33.3 | 23.5 | 69.2 | N quad. | 7.6 | .5 | Ci.-S., A.-Cu. | Cu. | ------ | |
| 30 | 60.93 | 27.8 | 33.6 | 24 | 57 | Variable | 11 | 0 | ------------------ | Cu. | ------ | ≡° a. |
| 31 | 59.57 | 27.8 | 33.2 | 22? | 62.7 | Variable | 9.7 | 1.7 | Ci.-S. | Cu. | ------ | ≡° a. |
| Mean | 760.05 | 26.4 | 32 | 21.7 | 69.6 | ------------ | 9.1 | 2 | ------------------ | ------------------ | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 3.5 | |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm..]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 761.12 | 24.1 | 30 | 20.5 | 76.2 | N quad. | 1.2 | 5.2 | ------------------ | Cu. N | ------ | Ω a. |
| 2 | 61.52 | 22.2 | 27 | 18 | 79.5 | N quad. | 1.8 | 7.3 | ------------------ | Cu. NW, S | ------ | Ω a. |
| 3 | 61.84 | 22.5 | 28.5 | 18.6 | 72.8 | N | .5 | 8.3 | ------------------ | Cu. NNE | ------ | Ω a. d p. |
| 4 | 61.34 | 24 | 30.7 | 18.6 | 72.2 | SW | .7 | 6.8 | ------------------ | Cu. S | ------ | |
| 5 | 60.51 | 25.5 | 33.4 | 18.7 | 69 | SE | .8 | 6.7 | ------------------ | Cu. SE | ------ | Ω a. |
| 6 | 59.71 | 26 | 34.7 | 18.5 | 66.8 | NE | .5 | 2.8 | ------------------ | Cu. SE | ------ | Ω² a. |
| 7 | 59.95 | 26.2 | 34.8 | 21.6 | 70.3 | Variable | .8 | 6.7 | ------------------ | Cu. | ------ | |
| 8 | 59.89 | 25.8 | 34.3 | 18.9 | 74.5 | SW, NW | .3 | 1.2 | ------------------ | Fr.-Cu. | ------ | Ω² ≡° a. |
| 9 | 59.60 | 25.7 | 34.3 | 18.3 | 72.5 | S, SE | .3 | .5 | ------------------ | Fr.-Cu. | ------ | Ω² ≡° a. |
| 10 | 58.96 | 24 | 35 | 18 | 77.8 | N quad. | .8 | 2 | Ci., Ci.-S. | Cu., S. | ------ | Ω² a. ⊕ p. |
| 11 | 60.51 | 26.3 | 33.4 | 20 | 69 | N | .5 | 3.5 | Ci.-Cu. SW | Cu. NE, E | ------ | Ω² a. |
| 12 | 61.41 | 26.3 | 33.5 | 22.5 | 74.7 | SE | 1.5 | 8.5 | Ci.-S. | Cu., Cu.-N. S | ------ | Ω² a. d p. |
| 13 | 61.01 | 27 | 35.8 | 19.5 | 69.5 | SE | .8 | 0 | ------------------ | ------------------ | ------ | Ω² a. |
| 14 | 89.84 | 27.9 | 36.5 | 20.7 | 68.3 | SE, SW | .8 | .5 | Ci. | S. | ------ | Ω² a. |
| 15 | 58.75 | 26.8 | 35.7 | 20 | 73.3 | NE | .3 | 3 | Ci.-Cu. | Cu. NE | ------ | Ω a. |
| 16 | 58.63 | 27.6 | 37.1 | 20.5 | 70 | N | .7 | 1 | A.-Cu. | Cu. | ------ | Ω a. |
| 17 | 59.10 | 27.5 | 37 | 21 | 76.7 | S, N | .7 | 5.8 | Ci. | Cu.-N., Cu. | ------ | Ω² a. d² ⛈° p. |
| 18 | 59.19 | 27.5 | 35.6 | 22.5 | 73.8 | N | .8 | 6.8 | ------------------ | Cu. N | ------ | |
| 19 | 60.86 | 25.6 | 31.1 | 22.4 | 75 | N quad. | 2.3 | 7.2 | ------------------ | Cu., S.-Cu. NW | ------ | Ω a. ↙° p. |
| 20 | 61.30 | 25.4 | 31.7 | 20.4 | 74.5 | NW | .7 | 6.7 | ------------------ | Cu. | ------ | Ω² a. |
| 21 | 60.92 | 26.5 | 34.4 | 20 | 71.5 | SE | .7 | 3.5 | Ci.-S. | Cu. E | ------ | Ω ≡° a. |
| 22 | 61.19 | 27.1 | 36 | 20.5 | 73.7 | Variable | 1 | 5 | Ci., Ci.-S. | Cu. E | ------ | Ω² a. |
| 23 | 61.14 | 27 | 34.4 | 22 | 76.2 | NW | 1.3 | 3.7 | A.-S. | Cu. N | ------ | Ω² a. ∞ p. |
| 24 | 61.81 | 24.5 | 32.4 | 22.5 | 89.3 | NW quad. | 1.5 | 9 | ------------------ | Cu.-N. NE | 10.7 | d ● p. |
| 25 | 62.48 | 23.8 | 27 | 21.3 | 86 | NW, N | 1 | 9.8 | ------------------ | Cu.-N. N | 2.3 | ● d a. p. |
| 26 | 63.28 | 24.8 | 29.5 | 21.2 | 79.8 | N, S | .3 | 8.8 | ------------------ | Cu.-N. E | 2.8 | d a. |
| 27 | 63.94 | 23.8 | 25.8 | 21.5 | 87 | N | .2 | 9.2 | ------------------ | Cu.-N. SW | 8.1 | ● a. d ● p. |
| 28 | 63.40 | 24.6 | 32.4 | 21.5 | 87.3 | NW | .2 | 9.3 | ------------------ | Cu.-N. NW, E | 25.9 | d ● a. p. |
| 29 | 63.31 | 26.2 | 33.4 | 22 | 78.8 | NE | .2 | 5.8 | ------------------ | Cu. ENE, S | ------ | ● a. |
| 30 | 62.50 | 25.7 | 34 | 20 | 74.8 | S, SW | .3 | 1.5 | Ci. | Fr.-Cu. E | ------ | Ω² a. |
| 31 | 60.60 | 25.8 | 34.3 | 20 | 76.2 | NW | .5 | 2.2 | ------------------ | Fr.-Cu., S. | ------ | Ω² a. |
| Mean | 760.96 | 25.6 | 33 | 20.4 | 75.4 | ------------ | .8 | 5.1 | ------------------ | ------------------ | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 49.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 761.99 | 23.5 | 27.5 | 20 | 72.7 | N | 15.3 | 7 | ------ | Cu.-N., S.-Cu. N | 2.1 | ●° a. |
| 2 | 62.47 | 21.5 | 24.4 | 19.4 | 75.2 | NE | 22.9 | 10 | ------ | Cu.-N., S.-Cu. NE | 4.3 | ● a. p. |
| 3 | 62.73 | 21.4 | 23.8 | 19 | 74.3 | E | 15.2 | 8.5 | ------ | S.-Cu. E | ------ | |
| 4 | 61.59 | 22.7 | 27.7 | 18.8 | 74.3 | E | 11.2 | 5.8 | A.-Cu. SW | S.-Cu. E | ------ | |
| 5 | 60.63 | 24.3 | 30.1 | 19.5 | 74.8 | SE quad. | 13.8 | 3 | A.-Cu. SE | S.-Cu. | ------ | |
| 6 | 60.24 | 24.4 | 29.5 | 20.1 | 77.8 | S, NE | 11.9 | 2.5 | A.-Cu. W | S.-Cu., Cu. | ------ | Ω a. |
| 7 | 60.64 | 24.1 | 29.2 | 21.3 | 85.3 | NE, E | 10.1 | 5.8 | A.-Cu. | Cu.-N. S | ------ | |
| 8 | 60.35 | 24.3 | 30 | 19.5 | 80.3 | E | 11 | 0 | ------ | ------ | ------ | Ω a. |
| 9 | 60.02 | 24.3 | 30 | 19.5 | 77.7 | E | 9.6 | 0 | ------ | ------ | ------ | Ω ≡ a. |
| 10 | 59.46 | 24.6 | 30.9 | 20.1 | 77 | Variable. | 13.2 | 1.5 | Ci. SW | Cu.-N., S.-Cu. | ------ | Ω a. ∞ a. p. |
| 11 | 61.40 | 24.9 | 29 | 20.4 | 80.3 | NE quad. | 12.7 | 4.2 | A.-Cu. S | Fr.-Cu. N | 2.1 | Ω ≡ a. ∞ a. p. |
| 12 | 61.56 | 24.8 | 30 | 22.3 | 84 | E | 8.1 | 10 | A.-Cu. | S.-Cu. SE | ------ | ● a. |
| 13 | 61.19 | 25.5 | 32.3 | 21.1 | 77.2 | E quad. | 14.1 | 1.8 | A.-Cu. | S.-Cu. | ------ | |
| 14 | 60.02 | 25.8 | 30.9 | 21.6 | 79.5 | E | 12.1 | 0 | ------ | ------ | ------ | Ω a. |
| 15 | 59.12 | 25.6 | 30.9 | 21.9 | 81.7 | E, NE | 10.5 | .2 | Ci.-S. | S.-Cu. | ------ | Ω ∞ a. p. |
| 16 | 59.14 | 25.8 | 31.3 | 21.6 | 79 | SE, N | 11.6 | 1.7 | ------ | S.-Cu. | ------ | Ω a. ∞ a. p. |
| 17 | 59.59 | 26.1 | 30.8 | 23.1 | 84.8 | N, NE | 8.4 | 2.2 | A.-Cu., Ci.-S. | S.-Cu. W | ------ | Ω ∞ a. ↯ ⊤ p. |
| 18 | 59.70 | 26 | 30.6 | 22.3 | 79.7 | NE, N | 16.7 | 4.7 | A.-Cu. | S.-Cu. W | ------ | ∞ p. |
| 19 | 61.91 | 23.7 | 25.9 | 21.1 | 77.7 | NE quad. | 25.1 | 10 | ------ | S.-Cu. E | .8 | |
| 20 | 61.94 | 23.9 | 26.7 | 21.1 | 75.8 | E | 13.9 | 10 | A.-Cu. SE | S.-Cu. E | ------ | ●° a. |
| 21 | 61.24 | 25.3 | 30.6 | 21.1 | 79 | E | 8.2 | 3.7 | A.-Cu. S | Cu.-N. SE | ------ | ∞ a. p. |
| 22 | 61.50 | 25.5 | 30.4 | 21 | 79.8 | E | 10.3 | 0 | ------ | ------ | ------ | ∞ a. p. |
| 23 | 61.88 | 26.1 | 29.8 | 22.7 | 79.3 | NE | 14 | 3.7 | ------ | Cu.-N. NE | ------ | ∞ a. p. ⌈↯ p. |
| 24 | 62.66 | 24.2 | 26.4 | 22.8 | 74.8 | NE | 26.3 | 10 | ------ | Cu.-N., S.-Cu. NE | .5 | |
| 25 | 63.10 | 23.8 | 25.5 | 22.3 | 78 | E | 21 | 10 | ------ | S.-Cu. ENE | 1.5 | ● a. |
| 26 | 63.75 | 24.7 | 27 | 23.1 | 73 | E | 21.8 | 9.5 | A.-Cu. E | S.-Cu. E | ------ | |
| 27 | 64.28 | 25 | 29.5 | 22.2 | 75.5 | E | 15.1 | 10 | A.-Cu. S | S.-Cu. E | .8 | ●° p. |
| 28 | 63.77 | 25.1 | 27.8 | 23 | 84.2 | E | 16.1 | 9.8 | A.-Cu. W | S.-Cu., Cu.-N. E | 2.3 | |
| 29 | 63.79 | 24.8 | 28.2 | 22 | 79.3 | E | 14.9 | 5.2 | ------ | S.-Cu., Cu.-N. SE | ------ | ● a. |
| 30 | 62.93 | 24.6 | 29.5 | 20.2 | 79.7 | E | 13.7 | 0 | ------ | ------ | ------ | Ω ≡ a. |
| 31 | 61.12 | 24.6 | 28.8 | 20 | 75.2 | E | 16.9 | .2 | ------ | Cu.-N. | ------ | Ω ≡ a. |
| Mean | 761.47 | 24.5 | 28.9 | 21.1 | 78.3 | ------ | 14.4 | 4.9 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 14.4 | |

# METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

## ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.3 | 22 | 96 | 73 | 0 | 3 | ------ | Ω a. |
| 2 | 29.3 | 22 | 98 | 70 | 1 | 3 | ------ | Ω a. |
| 3 | 29.8 | 21.2 | 96 | 73 | 0 | 2 | ------ | Ω a. |
| 4 | 32.8 | 20.5 | 95 | 51 | 1 | 4 | ------ | Ω a. |
| 5 | 31.8 | 20.4 | 96 | 56 | 2 | 4 | ------ | Ω a. |
| 6 | 30.8 | 22.5 | 96 | 70 | 1 | 9 | ------ | Ω a. |
| 7 | 30.5 | 19 | 97 | 63 | 0 | 3 | ------ | Ω a. |
| 8 | 30.5 | 18.6 | 94 | 53 | 0 | 4 | ------ | Ω a. |
| 9 | 30.8? | 20 | 94 | 51 | 0 | 4 | ------ | Ω a. |
| 10 | 30.3 | 19 | 95 | 61 | 0 | 3 | ------ | Ω² a. |
| 11 | 30.3 | 19.8 | 97 | 66 | 0 | 3 | ------ | Ω a. |
| 12 | 32.3 | 18.2 | 89 | 57 | 0 | 4 | ------ | Ω a. |
| 13 | 32.8 | 18.9 | 96 | 68 | 0 | 4 | ------ | Ω a. |
| 14 | 33.3 | 22 | 93 | 60 | 1 | 3 | ------ | Ω a. |
| 15 | 31.8 | 22 | 96 | 62 | 4 | 8 | ------ | Ω a. |
| 16 | 30.8 | 20.5 | 96 | 67 | 9 | 9 | ------ | Ω a. ⊤ p. |
| 17 | 30.2 | 21.5 | 96 | 76 | 1 | 3 | ------ | Ω a. ⌈ζ p. |
| 18 | 30.3 | 22 | 96 | 66 | 2 | 8 | ------ | Ω a. ⊤ p. |
| 19 | 30.4 | 23 | 96 | 77 | 1 | 9 | ------ |  |
| 20 | 32.2 | 22.5 | 96 | 68 | 1 | 5 | ------ | Ω° a. |
| 21 | 32.2 | 20.5 | 95 | 53 | 1 | 8 | ------ | Ω° a. |
| 22 | 32.1 | 21 | 96 | 62 | 1 | 8 | ------ | Ω a. |
| 23 | 34.3 | 21 | 96 | 61 | 2 | 4 | ------ | Ω a. |
| 24 | 31.3 | 21.6 | 91 | 68 | 8 | 10 | ------ | Ω a. |
| 25 | 32.5 | 22 | 96 | 74 | 9 | 6 | ------ | Ω a. ⊤ p. |
| 26 | 33.3 | 22.5 | 96 | 68 | 9 | 10 | ------ | Ω a. ⊤ p. |
| 27 | 31.8 | 21.9 | 96 | 64 | 1 | 5 | ------ | Ω a. ⊤ p. |
| 28 | 34 | 21.5 | 92 | 62 | 2 | 5 | ------ | Ω a. |
| 29 | 32.3 | 21.6 | 96 | 71 | 10 | 10 | ------ | Ω a. |
| 30 | 30.3 | 23.2 | 92 | 77 | 2 | 4 | ------ | Ω a. p° ⊤ p. |
| 31 | 32.3 | 22.6 | 96 | 68 | 8 | 10 | ------ | Ω a. ⊤ p. |
| Mean | 31.5 | 21.1 | 95.2 | 65 | 2.5 | 5.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

## ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.4 | 21.3 | 84 | 70 | 2 | 4 | ------ |  |
| 2 | 31.1 | 21.4 | 80 | 63 | 8 | 6 | ------ |  |
| 3 | 28.6 | 20.6 | 87 | 80 | 1 | 4 | ------ | Ω a. |
| 4 | 31.6 | 20.9 | 90 | 66 | 2 | 5 | ------ | Ω a. |
| 5 | 29.7 | 22 | 88 | 71 | 7 | 7 | ------ |  |
| 6 | 31.6 | 21 | 75 | 72 | 3 | 3 | ------ | Ω a. |
| 7 | 30.5 | 19.1 | 76 | 65 | 1 | 5 | ------ | Ω° a. |
| 8 | 30 | 19.9 | 85 | 64 | 1 | 1 | ------ | Ω a. |
| 9 | 29.2 | 20.4 | 80 | 68 | 1 | 1 | ------ |  |
| 10 | 30 | 17.5 | 75 | 54 | 1 | 1 | ------ |  |
| 11 | 29.6 | 18.5 | 76 | 64 | 1 | 1 | ------ |  |
| 12 | 31.1 | 18.8 | 86 | 59 | 1 | 1 | ------ |  |
| 13 | 31 | 20.5 | 82 | 72 | 1 | 2 | ------ |  |
| 14 | 32 | 23 | 87 | 74 | 8 | 8 | ------ |  |
| 15 | 30 | 23.5 | 87 | 71 | 7 | 10 | ------ | ⌈ζ a. |
| 16 | 29.9 | 22.9 | 83 | 75 | 8 | 9 | ------ |  |
| 17 | 30.6 | 23 | 90 | 76 | 7 | 8 | ------ | ⌈ζ p. |
| 18 | 28.3 | 22.5 | 86 | 86 | 6 | 10 | 0.5 | ⌈ζ d p. |
| 19 | 28 | 22 | 87 | 83 | 5 | 9 | 2 | ⌈ζ ●° a. |
| 20 | 31.5 | 21.9 | 88 | 75 | 6 | 10 | ------ |  |
| 21 | 31 | 22 | 83 | 65 | 4 | 9 | ------ | Ω° a. |
| 22 | 30.2 | 21.9 | 86 | 71 | 1 | 8 | ------ |  |
| 23 | 32.7 | 22.4 | 87 | 57 | 8 | 8 | ------ |  |
| 24 | 30.1 | 22.3 | 82 | 65 | 4 | 9 | ------ |  |
| 25 | 31 | 22.4 | 86 | 67 | 7 | 9 | ------ |  |
| 26 | 31.7 | 22.8 | 89 | 64 | 8 | 8 | ------ | ⌈ζ p. |
| 27 | 31.9 | 22.7 | 91 | 65 | 9 | 4 | ------ | ⌈ζ p. |
| 28 | 32.1 | 22.5 | 82 | 60 | 6 | 3 | ------ |  |
| 29 | 31.1 | 22.4 | 91 | 71 | 9 | 4 | ------ |  |
| 30 | 32 | 23.5 | 86 | 80 | 8 | 9 | ------ |  |
| 31 | 29.9 | 22.8 | 85 | 75 | 5 | 9 | ------ | ⌈ζ p. |
| Mean | 30.6 | 21.6 | 84.5 | 69.3 | 4.7 | 6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 2.5 |  |

## DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.9 | 22.1 | 97 | 66 | 6 | 6 | ------ |  |
| 2 | 32.1 | 22 | 96 | 63 | 5 | 5 | 53.3 | ●² ⌈ζ p. |
| 3 | 33.1 | 22.3 | 98 | 66 | 6 | 7 | 29.5 | ⌈ζ a. ● a. p. |
| 4 | 32 | 21.8 | 99 | 64 | 5 | 5 | ------ | ● a. |
| 5 | 31.8 | 22.1 | 97 | 69 | 6 | 5 | ------ |  |
| 6 | 32.2 | 21.5 | 96 | 68 | 5 | 5 | ------ |  |
| 7 | 32.7 | 20.3 | 97 | 59 | 6 | 5 | ------ |  |
| 8 | 32.2 | 19.4 | 91 | 69 | 6 | 7 | 16 | ● p. |
| 9 | 31.6 | 19.5 | 91 | 58 | 6 | 5 | ------ |  |
| 10 | 31.7 | 21.7 | 96 | 64 | 6 | 5 | ------ |  |
| 11 | 30.7 | 21.1 | 95 | 64 | 7 | 6 | ------ |  |
| 12 | 32 | 21.7 | 95 | 69 | 5 | 5 | ------ |  |
| 13 | 34.5 | 20 | 94 | 69 | 6 | 5 | ------ |  |
| 14 | 32.2 | 21 | 90 | 64 | 6 | 5 | ------ |  |
| 15 | 32.6 | 21.1 | 94 | 63 | 5 | 5 | ------ |  |
| 16 | 32.1 | 22.3 | 96 | 69 | 5 | 6 | ------ |  |
| 17 | 32.6 | 22.5 | 97 | 68 | 5 | 5 | ------ | ⊤ p. |
| 18 | 31.7 | 21 | 96 | 72 | 7 | 7 | 27.9 | ●² p. |
| 19 | 33.6 | 21.6 | 98 | 60 | 6 | 6 | 17.5 | ● p. |
| 20 | 32.2 | 21.8 | 99 | 64 | 5 | 7 | ------ |  |
| 21 | 34.2 | 21.3 | 92 | 64 | 5 | 6 | ------ |  |
| 22 | 34.4 | 20.8 | 91 | 52 | 5 | 5 | ------ |  |
| 23 | 33.9 | 20 | 91 | 55 | 6 | 5 | ------ |  |
| 24 | 32.9 | 20.5 | 95 | 56 | 6 | 5 | ------ |  |
| 25 | 32.3 | 21 | 93 | 60 | 5 | 6 | ------ |  |
| 26 | 33.9 | 21 | 97 | 57 | 5 | 5 | ------ |  |
| 27 | 33.1 | 20.5 | 95 | 63 | 6 | 6 | ------ |  |
| 28 | 33.7 | 20.6 | 93 | 58 | 7 | 6 | ------ |  |
| 29 | 32.6 | 20.3 | 93 | 66 | 5 | 5 | ------ |  |
| 30 | 28.2 | 21 | 94 | 75 | 6 | 9 | 29 | ●² p. |
| 31 | 31.7 | 22 | 96 | 69 | 5 | 7 | ------ |  |
| Mean | 32.5 | 21.2 | 94.9 | 64 | 5.6 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 173.2 |  |

## COTABATO.

[$\phi$=7° 13′ N; $\lambda$=124° 15′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.6 | 24 | 93 | 60 | 7 | 3 | ------ | Ω a. |
| 2 | 32.8 | 23 | 95 | 60 | 8 | 5 | ------ | Ω ≡° a. ⌈ζ p. |
| 3 | 32.9 | 23.5 | 97 | 60 | 7 | 3 | ------ | Ω ≡ a. ⌈ζ p. |
| 4 | 31.8 | 22.8 | 95 | 62 | 6 | 3 | ------ | Ω a. ζ p. |
| 5 | 33 | 23.1 | 97 | 57 | 8 | 4 | ------ | Ω ≡ a. |
| 6 | 33.2 | 21.5 | 94 | 48 | 4 | 7 | ------ | Ω a. |
| 7 | 32.7 | 19.2 | 90 | 48 | 3 | 3 | ------ | Ω² a. ζ p. |
| 8 | 33.3 | 19.3 | 93 | 55 | 2 | 2 | ------ | Ω² a. |
| 9 | 33 | 20.1 | 93 | 54 | 2 | 2 | ------ | Ω² a. |
| 10 | 32 | 20.1 | 84 | 60 | 7 | 2 | ------ | Ω² a. ⊍ p. |
| 11 | 34.1 | 20 | 93 | 63 | 2 | 6 | ------ | Ω² a. ⊕ p. |
| 12 | 34.7 | 22.2 | 90 | 41 | 4 | 2 | ------ | Ω a. |
| 13 | 34.4 | 20.9 | 87 | 58 | 2 | 4 | ------ | Ω² a. ⌈ζ° d° p. |
| 14 | 35.1 | 22.2 | 86 | 50 | 2 | 4 | 2.8 | Ω² a. ⌈ζ p p. |
| 15 | 31.8 | 23.4 | 87 | 64 | 8 | 5 | ------ | Ω a. |
| 16 | 33.4 | 24 | 91 | 63 | 7 | 7 | ------ | Ω a. ζ p. |
| 17 | 34.5 | 23.5 | 94 | 61 | 3 | 4 | 13.2 | Ω² ⌈ζ² ●² p. |
| 18 | 33 | 21.9 | 96 | 64 | 10 | 8 | 19 | Ω² a. d ● ⌈ζ² p. |
| 19 | 33.4 | 20.5 | 96 | 68 | 7 | 3 | ------ | Ω² a. ⌈ζ p. |
| 20 | 34 | 22 | 94 | 57 | 5 | 3 | ------ | Ω² a. ⌈ζ p. |
| 21 | 33.3 | 22.5 | 92 | 61 | 3 | 4 | ------ | Ω² a. ζ° p. |
| 22 | 33.8 | 21.5 | 95 | 63 | 2 | 7 | ------ | Ω² a. ζ p. |
| 23 | 33.9 | 21.7 | 92 | 58 | 2 | 4 | .5 | Ω° a. ⌒ p p. |
| 24 | 32.9 | 23 | 95 | 63 | 3 | 4 | ------ | Ω² ≡° a. |
| 25 | 33.6 | 24.2 | 93 | 58 | 4 | 7 | ------ | Ω° a. ζ p. |
| 26 | 33.9 | 24.3 | 93 | 63 | 8 | 5 | 13 | Ω² ⌒° a. ⌈ζ² ● p. |
| 27 | 33.9 | 23.1 | 91 | 65 | 5 | 3 | 43.2 | Ω° a. ⌈ζ² ●² p. |
| 28 | 33.7 | 22.2 | 95 | 48 | 2 | 3 | ------ | Ω a. ζ p. |
| 29 | 33.5 | 22.6 | 82 | 66 | 2 | 7 | 4.1 | Ω° a. ● ⌈ζ p. |
| 30 | 30.2 | 22.5 | 92 | 74 | 9 | 10 | ------ | Ω² a. d° ζ° p. |
| 31 | 32.1 | 22.8 | 94 | 67 | 9 | 5 | 1.3 | Ω² a. d² ζ p. |
| Mean | 33.2 | 22.2 | 92.2 | 59.3 | 4.9 | 4.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 97.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAPITAN.

[$\phi$=8° 40′ N; $\lambda$=123° 25′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.7 | 24 | 94 | 71 | 8 | 7 | 0.8 | |
| 2 | 31.4 | 23.3 | 90 | 67 | 8 | 6 | ------ | ●° a. |
| 3 | 31 | 22.2 | 90 | 67 | 10 | 5 | 3.3 | ● a. |
| 4 | 29.6 | 22 | 89 | 69 | 10 | 3 | ------ | ●° a. |
| 5 | 29.8 | 22.4 | 92 | 69 | 5 | 8 | ------ | |
| 6 | 29.8 | 23 | 92 | 70 | 8 | 3 | ------ | Ω a. |
| 7 | 30.4 | 20 | 88 | 69 | 7 | 9 | .5 | Ω a. |
| 8 | 31.6 | 22.1 | 92 | 70 | 5 | 8 | 1 | ●° a. ● p. |
| 9 | 31.6 | 20.1 | 87 | 73 | 6 | 7 | ------ | |
| 10 | 31.6 | 21.3 | 92 | 74 | 4 | 8 | ------ | Ω a. |
| 11 | 31.4 | 21.3 | 94 | 74 | 5 | 3 | ------ | Ω a. |
| 12 | 31.3 | 22 | 90 | 72 | 8 | 3 | ------ | |
| 13 | 32.3 | 23.5 | 90 | 68 | 5 | 2 | ------ | |
| 14 | 31.7 | 23.6 | 90 | 71 | 4 | 3 | ------ | |
| 15 | 32.1 | 25.6? | 92 | 66 | 5 | 2 | 1.3 | |
| 16 | 32.2 | 22.2 | 91 | 68 | 10 | 4 | .5 | ● a. ᴗ p. |
| 17 | 32.5 | 22.4 | 91 | 67 | 7 | 4 | ------ | ↯ p. |
| 18 | 32.4 | 22.3 | 90 | 65 | 10 | 5 | ------ | ↯ p. |
| 19 | 32.2 | 22.4 | 90 | 65 | 10 | 7 | ------ | ↯ p. |
| 20 | 32.1 | 22.3 | 91 | 65 | 6 | 4 | ------ | ↯ p. |
| 21 | 32.2 | 22.1 | 93 | 69 | 6 | 5 | ------ | Ω a. ↯ p. |
| 22 | 32.5 | 22.5 | 90 | 65 | 7 | 6 | .5 | ● a. ↯ p. |
| 23 | 33.7 | 22.6 | 91 | 66 | 8 | 5 | ------ | Ω a. |
| 24 | 33 | 22.4 | 90 | 64 | 9 | 5 | 1 | ● a. |
| 25 | 33.1 | 22.7 | 88 | 64 | 8 | 3 | ------ | Ω a. |
| 26 | 33 | 22.5 | 91 | 62 | 7 | 5 | ------ | Ω a. |
| 27 | 33.4 | 23.2 | 89 | 62 | 6 | 3 | ------ | Ω a. |
| 28 | 33 | 22.6 | 88 | 63 | 8 | 4 | ------ | d° a. |
| 29 | 30.1 | 23.4 | 87 | 75 | 9 | 5 | ------ | Ω a. |
| 30 | 28.5 | 22.7 | 94 | 79 | 8 | 8 | ------ | Ω a. |
| 31 | 29.2 | 23.2 | 89 | 73 | 9 | 4 | ------ | Ω a. |
| Mean | 31.6 | 22.5 | 90.5 | 68.5 | 7.3 | 5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 8.9 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 27.7 | 24.1 | 93 | 84 | 9 | 7 | 4.6 | ⊤ ● a. ● ↯ p. |
| 2 | 28.6 | 23 | 96 | 68 | 7 | 7 | ------ | ● a. ↯ p. |
| 3 | 28.8 | 20.8 | 95 | 65 | 6 | 5 | ------ | Ω ⊕ a. ↯ p. |
| 4 | 27.5 | 21.2 | 95 | 90 | 10 | 10 | 9.4 | Ω a. ● d p. |
| 5 | 28.3 | 20.7 | 97 | 69 | 8 | 3 | ------ | Ω$^2$ a. ⊕° p. |
| 6 | 28.1 | 20.4 | 94 | 62 | 8 | 4 | ------ | Ω$^2$ a. |
| 7 | 28.5 | 18.1 | 94 | 54 | 6 | 3 | ------ | Ω a. |
| 8 | 28.5 | 19 | 97 | 60 | 6 | 3 | ------ | Ω$^2$ ≡ a. |
| 9 | 28.5 | 20.6 | 93 | 68 | 7 | 8 | .5 | Ω$^2$ a. d° ⌒ p. |
| 10 | 28.2 | 21.5 | 93 | 72 | 9 | 7 | ------ | ● a. ↯ p. |
| 11 | 29.5 | 22.5 | 95 | 67 | 9 | 3 | ------ | Ω a. ⌒ ⌈↯ p. |
| 12 | 32 | 23.1 | 91 | 49 | 0 | 3 | ------ | Ω a. |
| 13 | 29.6 | 22.5 | 86 | 71 | 1 | 8 | 1.5 | Ω a. ● ⊤ p. |
| 14 | 29.6 | 20.5 | 96 | 65 | 6 | 3 | ------ | Ω$^2$ ≡ a. ↯ p. |
| 15 | 29.8 | 21.1 | 95 | 65 | 2 | 4 | ------ | Ω$^2$ a. ⊤ p. |
| 16 | 32.1 | 22.9 | 91 | 78 | 7 | 8 | 34.1 | Ω a. ⌈↯ ● p. |
| 17 | 31 | 22.8 | 94 | 87 | 2 | 9 | .8 | Ω$^2$ a. ⌈↯ p. |
| 18 | 29 | 22.7 | 97 | 70 | 9 | 8 | ------ | ● a. ⌈↯ p. |
| 19 | 29.1 | 22.3 | 96 | 69 | 3 | 6 | ------ | Ω ≡° a. ⊤ p. |
| 20 | 28.7 | 20.7 | 99 | 72 | 0 | 7 | .3 | Ω ≡$^2$ a. ⊤ ● p. |
| 21 | 29.5 | 21.2 | 93 | 63 | 2 | 4 | ------ | Ω$^2$ a. ⌈ p. |
| 22 | 29.6 | 22.3 | 95 | 73 | 4 | 6 | 3.3 | Ω ● a. |
| 23 | 29.7 | 20.4 | 95 | 62 | 3 | 4 | ------ | Ω$^2$ a. |
| 24 | 29.5 | 22.3 | 97 | 71 | 6 | 7 | ------ | Ω ≡ a. ●° p. |
| 25 | 30.3 | 21.6 | 96 | 65 | 5 | 4 | ------ | Ω$^2$ ≡° a. |
| 26 | 31.2 | 22.1 | 90 | 86 | 3 | 8 | 3 | Ω$^2$ a. ● p. |
| 27 | 30 | 21.6 | 91 | 55 | 0 | 3 | ------ | Ω a. ↯ p. |
| 28 | 30.1 | 21.6 | 96 | 65 | 4 | 4 | .8 | Ω$^2$ a. ●° a. p. |
| 29 | 29.3 | 22.6 | 93 | 77 | 9 | 10 | 37.5 | ● a. p. ⌈↯ p. |
| 30 | 25.3 | 23.1 | 95 | 96 | 10 | 10 | 85.4 | ⊤ ●$^2$ a. p. ↯ p. |
| 31 | 26.2 | 22.2 | 96 | 82 | 10 | 10 | 1.8 | ● a. |
| Mean | 29.2 | 21.7 | 94.3 | 70.3 | 5.5 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 183 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.2 | 23.2 | 90 | 71 | 9 | 5 | ------ | Ω a. |
| 2 | 30.2 | 22.7 | 85 | 67 | 10 | 9 | ------ | Ω a. |
| 3 | 29.6 | 23.3 | 81 | 67 | 8 | 6 | 1 | Ω a. |
| 4 | 29.1 | 23.4 | 88 | 76 | 8 | 3 | ------ | ●° a. |
| 5 | 28.6 | 23 | 75 | 68 | 10 | 4 | ------ | d a. |
| 6 | 28.9 | 21.2 | 74 | 61 | 10 | 6 | ------ | ∞ a. p. |
| 7 | 29 | 20.3 | 83 | 60 | 6 | 6 | ------ | Ω° ∞ a. |
| 8 | 29.4 | 20.8 | 84 | 64 | 2 | 4 | ------ | Ω ∞ a. |
| 9 | 30.8 | 20.7 | 80 | 58 | 1 | 4 | ------ | Ω a. |
| 10 | 30.9 | 22.2 | 87 | 68 | 8 | 9 | ------ | Ω a. ○ p. |
| 11 | 30.5 | 24.5? | 83 | 70 | 4 | 5 | ------ | |
| 12 | 30.9 | 23.2 | 83 | 78 | 6 | 4 | ------ | Ω a. |
| 13 | 31.1 | 24.7 | 81 | 73 | 10 | 5 | ------ | Ω ∞ a. ⊕ p. |
| 14 | 31.4 | 23.5 | 71 | 59 | 4 | 1 | ------ | Ω a. |
| 15 | 30.3 | 23.1 | 82 | 71 | 1 | 4 | ------ | Ω a. |
| 16 | 30.3 | 23.8 | 85 | 69 | 8 | 3 | 7.1 | Ω a. |
| 17 | 30.1 | 23.8 | 91 | 76 | 10 | 4 | ------ | ● a. ⌈↯° p. |
| 18 | 28.8 | 23.5 | 84 | 78 | 10 | 10 | ------ | ↯ ⊤ a. ⌈↯° d° p. |
| 19 | 31 | 23.8 | 84 | 69 | 10 | 6 | 9.9 | Ω ⊤ a. ● p. |
| 20 | 30.2 | 23.2 | 87 | 65 | 10 | 3 | ------ | ●° a. |
| 21 | 30.6 | 23 | 84 | 71 | 10 | 4 | ------ | Ω a. |
| 22 | 30.2 | 23.8 | 88 | 84 | 10 | 10 | ------ | |
| 23 | 30.6 | 24.2 | 78 | 65 | 10 | 4 | ------ | |
| 24 | 31 | 23.7 | 88 | 66 | 10 | 5 | 10.9 | |
| 25 | 30.9 | 23.4 | 90 | 72 | 10 | 8 | ------ | ● a. |
| 26 | 29.8 | 23.9 | 87 | 75 | 8 | 10 | ------ | Ω a. ⊤ ↯° p. |
| 27 | 30.8 | 23.8 | 77 | 72 | 10 | 8 | ------ | |
| 28 | 29.8 | 23.8 | 77 | 75 | 1 | 3 | ------ | ↯ p. |
| 29 | 30.1 | 24.6 | 77 | 77 | 8 | 10 | 5.2 | d ● p. |
| 30 | 28.8 | 23.2 | 78 | 72 | 10 | 10 | 2.6 | Ω a. |
| 31 | 28.7 | 24 | 78 | 75 | 10 | 10 | ------ | d a. |
| Mean | 30.1 | 23.2 | 82.6 | 70.1 | 7.8 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 36.7 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | ------ | ------ | ------ | 10 | 10 | 139.2 | ●$^2$ a. d ⌈↯ ↙° a. p. |
| 2 | ------ | ------ | ------ | ------ | 10 | 10 | 91.7 | ●$^2$ ↙° d a. p. ⊤ p. |
| 3 | ------ | ------ | ------ | ------ | 10 | 10 | 18.3 | ● a. p. |
| 4 | ------ | ------ | ------ | ------ | 10 | 10 | 5.3 | ● a. p. |
| 5 | ------ | ------ | ------ | ------ | 9 | 9 | 2.3 | ● ⌒ a. d° p. |
| 6 | ------ | ------ | ------ | ------ | 6 | 6 | ------ | ☾° ⦶ p. |
| 7 | ------ | ------ | ------ | ------ | 6 | 8 | 1.5 | Ω$^2$ d° ○ a. ● ↯ p. |
| 8 | ------ | ------ | ------ | ------ | 9 | 6 | .5 | d° ●° a. |
| 9 | ------ | ------ | ------ | ------ | 4 | 6 | ------ | ☽° p. |
| 10 | 30.5 | 24.4 | 87 | 69 | 8 | 4 | .8 | Ω° ●° a. ○° p. |
| 11 | 30.8 | 25 | 89 | 73 | 6 | 5 | .5 | ●° a. p. d °p. |
| 12 | 29.9 | 24.4 | 84 | 67 | 4 | 4 | 2.5 | ●° ⦶° p. |
| 13 | 30 | 24.6 | 75 | 70 | 2 | 6 | 1 | d° a. p. ⦶ ●° p. |
| 14 | 32.2 | 24.8 | 89 | 73 | 6 | 6 | 17.3 | d° ● p. |
| 15 | 28.9 | 23.2 | 99 | 79 | 10 | 8 | 4.6 | ●° a. p. |
| 16 | 29.9 | 24.3 | 93 | 76 | 9 | 8 | .5 | ●° a. |
| 17 | 29.4 | 24.6 | 84 | 73 | 6 | 7 | .8 | ●° a. p. |
| 18 | 27.9 | 24.8 | 87 | 87 | 6 | 8 | 9.7 | ●° a. p. |
| 19 | 29.6 | 24.3 | 96 | 73 | 6 | 6 | .5 | ●° a. |
| 20 | 29.9 | 24.2 | 86 | 67 | 3 | 4 | ------ | Ω° a. |
| 21 | 29.7 | 23.8 | 91 | 65 | 3 | 2 | 3 | Ω$^2$ ●° a. |
| 22 | 30 | 24.6 | 82 | 68 | 4 | 6 | 2 | ●° p. |
| 23 | 30 | 24 | 94 | 67 | 6 | 5 | 2.1 | ●° a. |
| 24 | 30.4 | 24.4 | 91 | 68 | 7 | 4 | ------ | ●° a. |
| 25 | 31.2 | 24.6 | 82 | 68 | 7 | 3 | ------ | |
| 26 | 30.6 | 24.2 | 88 | 74 | 6 | 4 | ------ | ●° a |
| 27 | 30 | 24.6 | 76 | 92 | 8 | 6 | 14.2 | ● p. |
| 28 | 30.3 | 24.1 | 92 | 74 | 9 | 6 | 1.8 | d° ⌒° a. p. |
| 29 | 30.5 | 24.1 | 92 | 76 | 6 | 4 | 11.2 | ● a. |
| 30 | 30.9 | 25 | 89 | 75 | 8 | 6 | 1.8 | Ω a. ⌒° p. |
| 31 | 30 | 24.5 | 93 | 67 | 4 | 2 | 1.8 | ● a. d° p. |
| Mean | 30.1 | 24.4 | 88.1 | 72.8 | 6.7 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 334.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31 | 23.2 | 97 | 71 | 10 | 10 | ------ |  |
| 2 | 30.9 | 23 | 89 | 65 | 10 | 8 | ------ |  |
| 3 | 31 | 21.8 | 85 | 79 | 10 | 9 | ------ |  |
| 4 | 29.5 | 21.8 | 83 | 74 | 10 | 10 | ------ | ↯ p. |
| 5 | 29 | 21.7 | 89 | 73 | 10 | 10 | ------ | ⌣° p. |
| 6 | 28.2 | 21.3 | 95 | 66 | 10 | 10 | ------ |  |
| 7 | 28 | 22.2 | 88 | 74 | 10 | 10 | ------ | ∞$^2$ ⌣$^2$ p. |
| 8 | 29.4 | 20.5 | 89 | 70 | 10 | 4 | ------ | Ω° a. ↯° p. |
| 9 | 31 | 20.7 | 86 | 70 | 10 | 8 | ------ | Ω$^2$ a. ↯° p. |
| 10 | 30.5 | 22.6 | 95 | 66 | 10 | 10 | ------ |  |
| 11 | 31.5 | 22.6 | 88 | 71 | 10 | 7 | ------ | d° a. |
| 12 | 31.1 | 23.2 | 92 | 64 | 10 | 4 | ------ |  |
| 13 | 31.1 | 23.1 | 93 | 89 | 10 | 8 | ------ |  |
| 14 | 29.5 | 22 | 86 | 76 | 10 | 7 | ------ |  |
| 15 | 30.2 | 22.2 | 90 | 77 | 10 | 6 | ------ |  |
| 16 | 32 | 22.1 | 91 | 75 | 10 | 8 | ------ | ⌣ ↯ Φ° p. |
| 17 | 31.5 | 22.1 | 95 | 76 | 10 | 7 | ------ | ⊤$^2$ d° ⌣$^2$ p. |
| 18 | 31.6 | 23.6 | 94 | 80 | 10 | 10 | ------ | Φ° a. |
| 19 | 30 | 23 | 86 | 85 | 10 | 10 | 26.9 | ●$^2$ p. |
| 20 | 30.5 | 20.6 | 91 | 74 | 10 | 10 | ------ | Ω$^2$ a. |
| 21 | 30.2 | 22.4 | 91 | 73 | 10 | 7 | ------ | Φ ↯ Ω$^2$ a. |
| 22 | 31.6 | 22.4 | 93 | 66 | 10 | 8 | ------ | d° a. ∞°d ⌈↯$^2$ p. |
| 23 | 31.6 | 22.3 | 88 | 80 | 10 | 10 | ------ |  |
| 24 | 30.5 | 22.1 | 90 | 68 | 10 | 10 | ------ | d° a. p. |
| 25 | 31.6 | 22 | 91 | 82 | 10 | 10 | 9.7 | p d° p. |
| 26 | 30.6 | 22 | 93 | 71 | 10 | 8 | ------ | ↯$^2$ p. |
| 27 | 31.4 | 22.6 | 91 | 72 | 10 | 10 | ------ | ∞$^2$ p. |
| 28 | 30.5 | 22 | 91 | 82 | 10 | 10 | 7.9 | d° a. d ⌒ ↯$^2$ p p. |
| 29 | 31.5 | 22.6 | 87 | 85 | 10 | 10 | 23.9 | d a. p. ●$^2$ ↯$^2$ p. |
| 30 | 30 | 22.8 | 86 | 77 | 10 | 10 | 24.4 | d° ⌈↯$^2$ ● p. |
| 31 | ------ | 23 | 91 | 84 | 10 | 10 | 47.2 | ●d$^2$⊤$^2$a. d↯$^2$⊤$^2$ |
| Mean | 30.6 | 22.2 | 90.1 | 74.7 | 10 | 8.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 140 |  |

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10 | mm. |  |
| 1 | 31 | 21.5 | 88 | 68 | 1 | 2 | ------ | Ω a. |
| 2 | 31.5 | 21.2 | 86 | 62 | 4 | 1 | ------ | Ω a. |
| 3 | 32.1 | 20.5 | 91 | 62 | 1 | 2 | ------ | Ω a. |
| 4 | 32.5 | 20.5 | 92 | 56 | 2 | 3 | ------ |  |
| 5 | 33 | 20 | 97 | 56 | 5 | 1 | ------ | Ω a. |
| 6 | 32.4 | 18.6 | 76 | 54 | 7 | 1 | ------ | Ω a. |
| 7 | 32.8 | 18.5 | 71 | 52 | 2 | 1 | ------ | Ω$^2$ a. |
| 8 | 32.1 | 19 | 80 | 48 | 0 | 6 | ------ | Ω° a. |
| 9 | 32.2 | 19 | 86 | 57 | 0 | 7 | ------ |  |
| 10 | 32 | 20.5 | 81 | 59 | 8 | 9 | ------ |  |
| 11 | 32.5 | 21.6 | 86 | 65 | 7 | 10 | 1.5 | ⊤ d ⌈↯ ● p. |
| 12 | 32.5 | 23 | 92 | 71 | 3 | 3 | ------ |  |
| 13 | 33.6 | 21.1 | 88 | 60 | 1 | 1 | ------ |  |
| 14 | 34 | 20 | 86 | 55 | 1 | 0 | ------ | Ω° a. |
| 15 | 34 | 21 | 87 | 63 | 1 | 4 | ------ |  |
| 16 | 33.2 | 21.1 | 87 | 59 | 1 | 4 | ------ |  |
| 17 | 33.5 | 22.5 | 83 | 63 | 7 | 8 | ------ | ↯ p. |
| 18 | 34 | 23.1 | 86 | 64 | 9 | 7 | .5 | ↯ p. |
| 19 | 33.1 | 23 | 91 | 60 | 8 | 6 | .3 | ● a. ⊤ ↯ ●° p. |
| 20 | 33.6 | 21.5 | 82 | 57 | 2 | 5 | ------ |  |
| 21 | 34.1 | 20.4 | 83 | 52 | 2 | 4 | ------ |  |
| 22 | 34.5 | 21.5 | 86 | 68 | 3 | 8 | 8:1 | d a. ● p. |
| 23 | 34 | 21.5 | 76 | 55 | 8 | 7 | ------ |  |
| 24 | 33 | 22 | 83 | 65 | 5 | 8 | ------ |  |
| 25 | 34 | 20.8 | 87 | 57 | 8 | 6 | ------ |  |
| 26 | 34 | 21.5 | 83 | 58 | 5 | 6 | ------ | ⊤ p. |
| 27 | 34.2 | 22.1 | 87 | 52 | 6 | 7 | ------ | d ↯ p. |
| 28 | 35.5 | 21.1 | 87 | 59 | 4 | 9 | .3 | ●° d° p. |
| 29 | 35 | 23.7 | 82 | 55 | 7 | 8 | ------ | d p. |
| 30 | 34.9 | 25.2 | 60 | 50 | 7 | 10 | ------ | ∞ p. |
| 31 | 34 | 21.9 | 75 | 52 | 9 | 10 | ------ |  |
| Mean | 33.3 | 21.3 | 84 | 58.5 | 4.3 | 5.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 10.7 |  |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.9 | 25.1 | 83 | 64 | 7 | 7 | ------ | Ω a. |
| 2 | 30.7 | 25 | 77 | 61 | 8 | 8 | ------ | Ω a. |
| 3 | 30.9 | 24.4 | 83 | 66 | 8 | 6 | ------ | Ω a. |
| 4 | 31.9 | 23.9 | 89 | 62 | 8 | 7 | ------ | Ω a. ⊕ p. |
| 5 | 30.8 | 22.7 | 90 | 57 | 9 | 4 | ------ | Ω a. |
| 6 | 31 | 21.1 | 94 | 57 | 9 | 5 | ------ | Ω$^2$ a. |
| 7 | 30.8 | 21.6 | 76 | 55 | 8 | 4 | ------ | Ω a. |
| 8 | 30.4 | 24.2 | 77 | 65 | 8 | 7 | ------ | Ω a. Φ p. |
| 9 | 31 | 24.2 | 84 | 60 | 8 | 6 | ------ | Ω a. |
| 10 | 30.6 | 23.6 | 85 | 66 | 7 | 6 | ------ | Ω a. |
| 11 | 30.7 | 25.1 | 84 | 71 | 7 | 8 | ------ | Ω a. |
| 12 | 33 | 25.6 | 92 | 60 | 10 | 7 | ------ | Ω a. |
| 13 | 32 | 24.5 | 93 | 65 | 9 | 7 | ------ | Ω$^2$ a. |
| 14 | 32.7 | 25.5 | 89 | 57 | 10 | 3 | ------ | Ω$^2$ a. |
| 15 | 31.9 | 25.6 | 89 | 66 | 9 | 4 | ------ | Ω$^2$ a. |
| 16 | 32.6 | 25 | 92 | 65 | 9 | 9 | ------ | Ω$^2$ a. ⊕ p. |
| 17 | 31.7 | 23.9 | 89 | 69 | 8 | 6 | ------ | Ω a. |
| 18 | 31.7 | 25.8 | 89 | 68 | 8 | 5 | ------ | Ω a. |
| 19 | 31.8 | 24.5 | 82 | 64 | 9 | 7 | ------ | Ω a. |
| 20 | 32.2 | 25.9 | 89 | 62 | 10 | 9 | ------ | Ω° a. |
| 21 | 32.4 | 25.9 | 82 | 63 | 7 | 8 | ------ | Ω a. |
| 22 | 32 | 26.1 | 82 | 67 | 9 | 8 | ------ | Ω a. ⊕ p. |
| 23 | 31.1 | 26.2 | 85 | 68 | 10 | 10 | ------ |  |
| 24 | 31.3 | 26.1 | 82 | 64 | 10 | 10 | ------ | Ω a. |
| 25 | 31.9 | 26.1 | 83 | 65 | 10 | 9 | ------ |  |
| 26 | 30.8 | 26 | 80 | 66 | 10 | 9 | ------ | Ω a. |
| 27 | 32.2 | 25.8 | 81 | 63 | 10 | 6 | ------ | Ω a. ↯ p. |
| 28 | 32.8 | 26.3 | 81 | 62 | 9 | 7 | ------ | Ω° a. ⊕ p. |
| 29 | 32.4 | 26.5 | 77 | 61 | 9 | 8 | ------ |  |
| 30 | 32.5 | 26.4 | 75 | 61 | 9 | 8 | ------ | ⊕ p. |
| 31 | 31.6 | 25.8 | 76 | 64 | 8 | 9 | ------ |  |
| Mean | 31.6 | 25 | 84.2 | 63.4 | 8.7 | 7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30 | 22.1 | 96 | 73 | 3 | 4 | 0.3 | Ω ≡° a. ● ↯ p. |
| 2 | 29.5 | 21.3 | 95 | 85 | 5 | 10 | 7.4 | Ω ≡° a. ● p. |
| 3 | 29.8 | 22 | 96 | 68 | 8 | 9 | 5.8 | Ω ≡° a. d ● p. |
| 4 | 28.5 | 21.5 | 90 | 63 | 9 | 7 | .3 | ● a. Φ° p. |
| 5 | 29 | 19 | 97 | 59 | 2 | 3 | ------ | Ω ≡ ○ a. ⌣° p. |
| 6 | 29 | 18.3 | 93 | 57 | 3 | 3 | ------ | Ω a. |
| 7 | 29.5 | 18.3 | 96 | 64 | 2 | 7 | ------ | Ω ≡° a. ⌣ p. |
| 8 | 30 | 18.6 | 93 | 64 | 2 | 4 | ------ | Ω a. Φ° p. |
| 9 | 30.3 | 21.5 | 94 | 63 | 4 | 5 | ------ | Ω a. ⌣ Φ p. |
| 10 | 28.5 | 21.3 | 92 | 68 | 7 | 4 | 35.6 | Ω ●° a. |
| 11 | 29.5 | 23.3 | 95 | 86 | 10 | 10 | 19.6 | ● ⌈↯ a. p. ⌣ p. |
| 12 | 30 | 22.5 | 98 | 69 | 10 | 6 | 16.8 | ● a. p. ⌣ p. |
| 13 | 29.9 | 23.5 | 96 | 69 | 8 | 7 | 5.8 | ≡° ● a. ●° Φ° p. |
| 14 | 29.7 | 20.6 | 93 | 68 | 4 | 4 | 6.4 | Ω° a. ● a. p. |
| 15 | 30.2 | 22.3 | 97 | 66 | 7 | 4 | ------ | ● ≡ ○ a. Φ° p. |
| 16 | 30.5 | 22.6 | 97 | 67 | 7 | 6 | 6.6 | d ≡ ● a. ⌈↯ ⌣ |
| 17 | 29 | 23.1 | 94 | 80 | 9 | 8 | 3.6 | d ⊤ ● a. ⊤ ↯ p. |
| 18 | 30.5 | 21.7 | 97 | 72 | 4 | 7 | ------ | Ω ⊤ a. ⊤ ○° ↯ p. |
| 19 | 30.3 | 21.8 | 96 | 57 | 3 | 3 | ------ | Ω ≡° a. |
| 20 | 30.5 | 21.6 | 96 | 78 | 4 | 9 | 2.1 | Ω ≡° a. ● p. |
| 21 | 30.5 | 22 | 96 | 73 | 6 | 6 | 6.1 | ≡° d a. ○ ↯ p. |
| 22 | 29.8 | 23.5 | 93 | 71 | 9 | 6 | 17.5 | ● a. p. d ⊤° p. |
| 23 | 30.3 | 21.5 | 96 | 67 | 3 | 4 | ------ | Ω ≡° a. ↯ p. |
| 24 | 30.5 | 21.2 | 97 | 65 | 3 | 4 | 10.9 | Ω ≡ a. ● p. |
| 25 | 30 | 22.5 | 97 | 69 | 7 | 7 | 33.6 | ≡ a. ● a. p. |
| 26 | 29.9 | 21.8 | 96 | 71 | 8 | 4 | 32.8 | ≡° a. ● a. p. |
| 27 | 28.3 | 22.2 | 97 | 78 | 9 | 7 | 21.6 | ●$^2$≡⌒a. ●°⌒° p. |
| 28 | 30 | 23.5 | 77 | 79 | 8 | 7 | 3 | ● a. p. |
| 29 | 30 | 24.2 | 77 | 63 | 6 | 5 | ------ | ↯ p. |
| 30 | 30.5 | 24 | 73 | 64 | 4 | 5 | .3 | ○° a. ↯ p. |
| 31 | 30.1 | 24.3 | 88 | 67 | 8 | 7 | 2.3 | ●° ○ a. ↯ ●° p. |
| Mean | 29.8 | 21.9 | 93.2 | 69.1 | 5.9 | 5.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 238.4 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.5 | 23.6 | ------ | ------ | 7 | 4 | ------ |  |
| 2 | 28.5 | 22.5 | ------ | ------ | 9 | 4 | ------ |  |
| 3 | 27.6 | 21.8 | ------ | ------ | 7 | 8 | ------ |  |
| 4 | 29.6 | 22.5 | ------ | ------ | 9 | 8 | ------ |  |
| 5 | 29.6 | 22.4 | ------ | ------ | 7 | 8 | ------ |  |
| 6 | 29.6 | 20.6 | ------ | ------ | 9 | 7 | ------ |  |
| 7 | 29.8 | 21.2 | ------ | ------ | 7 | 6 | 0.3 |  |
| 8 | 28.2 | 22 | ------ | ------ | 10 | 9 | ------ |  |
| 9 | 29.5 | 22.4 | ------ | ------ | 9 | 8 | ------ |  |
| 10 | ------ | 21.6 | ------ | ------ | 8 | 9 | 1 |  |
| 11 | 28.6 | 24 | ------ | ------ | 8 | 7 | 27.2 |  |
| 12 | 30 | 23.6 | ------ | ------ | 9 | 7 | .3 |  |
| 13 | 30.8 | 23.2 | ------ | ------ | 8 | 7 | ------ |  |
| 14 | 31.2 | 22.5 | ------ | ------ | 8 | 6 | ------ |  |
| 15 | 30.6 | 23.2 | ------ | ------ | 8 | 6 | ------ |  |
| 16 | 31.6 | 23.8 | ------ | ------ | 8 | 6 | ------ |  |
| 17 | 32 | 23.6 | ------ | ------ | 8 | 4 | ------ |  |
| 18 | 31.6 | 23 | ------ | ------ | 7 | 6 | ------ |  |
| 19 | 32 | 23.6 | ------ | ------ | 9 | 7 | ------ |  |
| 20 | 31.4? | 22.6 | ------ | ------ | 8 | 8 | ------ |  |
| 21 | 31.6 | 23.2 | ------ | ------ | 9 | 8 | ------ |  |
| 22 | 31.8 | 24.2 | ------ | ------ | 9 | 9 | ------ |  |
| 23 | 30.2 | 23.5 | ------ | ------ | 10 | 8 | ------ |  |
| 24 | 30.6 | 24 | ------ | ------ | 8 | 7 | ------ |  |
| 25 | 31.8 | 24.2 | ------ | ------ | 9 | 8 | ------ |  |
| 26 | 31 | 24.2 | ------ | ------ | 9 | 9 | 1.8 |  |
| 27 | 30.2 | 23.2 | ------ | ------ | 8 | 8 | 9.9 |  |
| 28 | 28.2 | 23.4 | ------ | ------ | 9 | 9 | 21.1 |  |
| 29 | 30.6 | 23.4 | ------ | ------ | 9 | 8 | 3 |  |
| 30 | 31.2 | 22.8 | ------ | ------ | 8 | 9 | ------ |  |
| 31 | 30 | 25 | ------ | ------ | 10 | 9 | ------ |  |
| Mean | 30.3 | 23.1 | ------ | ------ | 8.4 | 7.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 64.6 |  |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.4 | 24.4 | 84 | 80 | 8 | 10 | 29.2 |  |
| 2 | 29 | 24.6 | 92 | 78 | 10 | 8 | 43.6 |  |
| 3 | 29 | 23.8 | 92 | 75 | 10 | 10 | 7.6 |  |
| 4 | 28.4 | 24 | 92 | 80 | 10 | 10 | 7.6 |  |
| 5 | 29.4 | 22.8 | 87 | 75 | 10 | 10 | 4.6 |  |
| 6 | 29.2 | 24.6 | 89 | 84 | 10 | 10 | 10.1 |  |
| 7 | 29 | 24 | 87 | 71 | 6 | 5 | 8.9 |  |
| 8 | 29.8 | 23.4 | 84 | 71 | 10 | 7 | 6.4 |  |
| 9 | 27.8 | 24.2 | 88 | 87 | 3 | 6 | 5.1 |  |
| 10 | 28.6 | 25.2 | 84 | 71 | 6 | 7 | 2.5 |  |
| 11 | 28 | 23.8 | 95 | 80 | 3 | 10 | 10.2 |  |
| 12 | 27.8 | 23.6 | 84 | 74 | 5 | 5 | 1.3 |  |
| 13 | 27.8 | 24 | 84 | 77 | 6 | 3 | ------ |  |
| 14 | 28.2 | 24.6 | 83 | 69 | 3 | 7 | ------ |  |
| 15 | 28.6 | 24.4 | 84 | 74 | 10 | 8 | .8 |  |
| 16 | 28 | 23.8 | 87 | 70 | 7 | 10 | ------ |  |
| 17 | 28.2 | 25 | 84 | 74 | 2 | 7 | ------ |  |
| 18 | 29.2 | 24.8 | 84 | 68 | 6 | 7 | ------ |  |
| 19 | 28 | 24.6 | 88 | 77 | 7 | 5 | 11.4 |  |
| 20 | 28.2 | 24.6 | 87 | 76 | 4 | 3 | ------ |  |
| 21 | 27.8 | 24.2 | 84 | 74 | 3 | 4 | ------ |  |
| 22 | 28.6 | 24.2 | 84 | 70 | 7 | 5 | 1.3 |  |
| 23 | 27.6 | 24.2 | 85 | 71 | 7 | 10 | 5.1 |  |
| 24 | 28 | 24 | 80 | 77 | 10 | 10 | 2.5 |  |
| 25 | 28.8 | 24 | 87 | 70 | 3 | 3 | ------ |  |
| 26 | 28.4 | 23.6 | 81 | 77 | 3 | 10 | 2.5 |  |
| 27 | 29 | 24 | 84 | 71 | 2 | 3 | ------ |  |
| 28 | 30 | 23 | 83 | 71 | 4 | 10 | ------ |  |
| 29 | 29.2 | 25.6 | 86 | 75 | 8 | 7 | 2 |  |
| 30 | 28.2 | 24.2 | 92 | 77 | 7 | 10 | 5.1 |  |
| 31 | 29.6 | 23.8 | 92 | 68 | 10 | 7 | ------ |  |
| Mean | 28.6 | 24.2 | 86.4 | 74.6 | 6.5 | 7.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 167.8 |  |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.6 | 20.2 | 93 | 67 | 4 | 4 | ------ | Ω a. |
| 2 | 27.5 | 21 | 93 | 76 | 8 | 10 | ------ | ●° a. ⊤ p. |
| 3 | 28.2 | 22.4 | 94 | 78 | 10 | 10 | 3.1 | ● a. |
| 4 | 28 | 21.2 | 95 | 70 | 10 | 4 | ------ |  |
| 5 | 28.4 | 21 | 93 | 67 | 10 | 7 | ------ | ●° a. |
| 6 | 28.5 | 18.4 | 88 | 70 | 7 | 3 | ------ |  |
| 7 | 29.3 | 19 | 88 | 55 | 6 | 2 | ------ |  |
| 8 | 29.2 | 18.8 | 98 | 61 | 4 | 2 | ------ | Ω a. |
| 9 | 29.3 | 20.2 | 83 | 62 | 8 | 5 | ------ |  |
| 10 | 29.2 | 18.8 | 95 | 69 | 3 | 8 | .3 | ⊖ ⊎ p. |
| 11 | 29.9 | 21 | 97 | 75 | 8 | 9 | 6.1 | p a. d p. |
| 12 | 29.8 | 23.6 | 97 | 92 | 10 | 10 | 11.2 | d a. ⊏ ● p. |
| 13 | 30 | 22.2 | 94 | 72 | 10 | 2 | 6.8 | ●° a. ● p. |
| 14 | 30.7 | 23.5 | 95 | 66 | 4 | 2 | 1.5 | d° ⊎ p. |
| 15 | 30 | 22.8 | 95 | 68 | 8 | 2 | ------ |  |
| 16 | 30.4 | 21.8 | 89 | 69 | 4 | 3 | .8 | ●° p. |
| 17 | 31.8 | 21.9 | 89 | 69 | 6 | 4 | ------ |  |
| 18 | 32.1 | 22.5 | 94 | 62 | 4 | 3 | ------ |  |
| 19 | 31.2 | 21.8 | 91 | 71 | 3 | 2 | ------ | ⚡ p. |
| 20 | 27.8 | 22.1 | 89 | 82 | 10 | 10 | 10.2 | ● a. d° p. |
| 21 | 29.6 | 22.1 | 96 | 66 | 10 | 3 | ------ |  |
| 22 | 30.2 | 24.8 | 88 | 66 | 10 | 3 | ------ |  |
| 23 | 30.6 | 21.2 | 95 | 54 | 10 | 2 | ------ |  |
| 24 | 30.9 | 22 | 86 | 61 | 10 | 4 | ------ |  |
| 25 | 32 | 22.2 | 88 | 59 | 8 | 3 | 2.2 | ● p. |
| 26 | 29.2 | 22.8 | 91 | 70 | 10 | 10 | 19.3 | ● a. p. |
| 27 | 30.4 | 21.3 | 96 | 74 | 10 | 10 | ------ | ●° ⌒° a. d° p. |
| 28 | 30.6 | 22.9 | 97 | 68 | 10 | 7 | 4.4 | Ω d p² a. ● p. |
| 29 | ------ | 23 | 72 | 69 | 10 | 4 | .8 | p° a. d° p. |
| 30 | ------ | ------ | ------ | ------ | 10 | 4 | ------ |  |
| 31 | 31 | 23.5 | 90 | 65 | 9 | 7 | ------ |  |
| Mean | 29.8 | 21.7 | 91.6 | 68.4 | 7.9 | 5.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 66.7 |  |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.4 | 20.4 | 97 | 73 | 3 | 6 | 1 | Ω² a. |
| 2 | 29.2 | 21.5 | 96 | 90 | 9 | 10 | 12.5 | ●° d a. ● p. |
| 3 | 27.4 | 20.5 | 97 | 76 | 10 | 10 | .3 | ● a. d p. |
| 4 | 29 | 22.9 | 91 | 74 | 8 | 5 | ------ |  |
| 5 | 29 | 18 | 93 | 63 | 5 | 4 | ------ | Ω ⊕ ○ a. |
| 6 | 29.3 | 17.7 | 94 | 71 | 6 | 6 | ------ | Ω² a. |
| 7 | 29.8 | 17.8 | 92 | 60 | 4 | 5 | ------ | Ω² ⊕ ○ a. |
| 8 | 30.5 | 22 | 91 | 61 | 9 | 6 | ------ |  |
| 9 | 31.5 | 20 2 | 91 | 70 | 7 | 5 | ------ | ⊕ ○ a. d p. |
| 10 | 28.2 | 19.4 | 94 | 80 | 6 | 9 | 23.9 | Ω a. |
| 11 | 29 | 23.4 | 97 | 78 | 10 | 9 | 3.8 | ● d ⊤ a. p. ⊏ |
| 12 | 30.4 | 25 | 89 | 80 | 10 | 7 | 3.6 | ● a. |
| 13 | 31 | 21.5 | 95 | 80 | 8 | 7 | 3.6 | ● a. |
| 14 | 31.1 | 21 | 95 | 70 | 5 | 4 | ------ | ●° ⊕ ○ a. |
| 15 | 30.9 | 20.8 | 96 | 70 | 4 | 7 | ------ | Ω² a. |
| 16 | 30 | 21.6 | 96 | 72 | 8 | 8 | 17.1 | Ω° ●° a. ⌒ ⚡ p. |
| 17 | 30.4 | 23 | 96 | 75 | 8 | 6 | 3.5 | ●² a. ⊤² ●° p. |
| 18 | 30.4 | 22.5 | 94 | 77 | 8 | 8 | ------ |  |
| 19 | 31.6 | 20.5 | 93 | 63 | 5 | 6 | ------ |  |
| 20 | 31.2 | 22.4 | 80 | 63 | 5 | 6 | ------ |  |
| 21 | 31.2 | 20.8 | 95 | 70 | 6 | 6 | ------ | Ω° a. |
| 22 | 31.4 | 21 | 93 | 66 | 7 | 8 | ------ | ⊕ ○ a. |
| 23 | 30.4 | 21.3 | 95 | 71 | 9 | 9 | ------ |  |
| 24 | 30.9 | 21.5 | 91 | 73 | 5 | 7 | 6 4 | Ω d° a. |
| 25 | 30.6 | 22.5 | 93 | 73 | 8 | 8 | 27.2 | ● a. p. |
| 26 | 26.6 | 22 | 94 | 91 | 9 | 10 | 39.8 | ●² a. d p. |
| 27 | 26.6 | 22 | 96 | 95 | 8 | 10 | 36.1 | ●² a. ● p. |
| 28 | 30.8 | 22.7 | 91 | 63 | 8 | 6 | 6.4 | ● a. p. d p. |
| 29 | 31.4 | 23 | 78 | 72 | 5 | 8 | 1.8 | ●° p. |
| 30 | 31.5 | 22.4 | 84 | 59 | 8 | 7 | ------ | ●° ⌒ a. |
| 31 | 32.5 | 22 | 80 | 65 | 8 | 8 | ------ | Ω° a. |
| Mean | 30.1 | 21.4 | 92.2 | 72.4 | 7.1 | 7.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 187 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.1 | 19.3 | 98 | 66 | 10 | 6 | ------ |  |
| 2 | 28.7 | 21.2 | 89 | 68 | 9 | 8 | 1.6 | ●° p. |
| 3 | 24.8 | 20.2 | 97 | 88 | 9 | 10 | 4.6 | d a. ●° a. p. |
| 4 | 29.5 | 19.8 | 97 | 74 | 8 | 8 | 2.3 | ●° p. |
| 5 | 30.1 | 17.5 | 98 | 60 | 6 | 7 | ------ |  |
| 6 | 30.6 | 16.3 | 97 | 58 | 7 | 6 | ------ |  |
| 7 | 29.6 | 15.6 | 98 | 58 | 8 | 5 | ------ |  |
| 8 | 29.5 | 17.4 | 94 | 59 | 9 | 7 | ------ |  |
| 9 | 29.9 | 17.1 | 95 | 66 | 9 | 8 | ------ |  |
| 10 | 30.2 | 17.4 | 98 | 68 | 5 | 10 | 2.5 | ●° p. |
| 11 | 29.2 | 22.2 | 98 | 75 | 10 | 9 | 23.7 | d a. ●° a. p. ⊤° p. |
| 12 | 30.6 | 23.2 | 98 | 89 | 9 | 9 | 4.6 | d ⊤° ●° p. |
| 13 | 30.6 | 21 | 99 | 73 | 4 | 7 | ------ |  |
| 14 | 31.5 | 19 | 98 | 71 | 4 | 7 | ------ |  |
| 15 | 31.6 | 19.5 | 98 | 67 | 4 | 7 | ------ | ≡° a. |
| 16 | 31.9 | 19.8 | 98 | 66 | 2 | 8 | ------ | ⊤° p. |
| 17 | 33 | 20.2 | 98 | 87 | 7 | 9 | 19.4 | ● ⊤° p. |
| 18 | 33.5 | 21.7 | 98 | 78 | 8 | 8 | .5 | ●° p. |
| 19 | 31.2 | 20 | 98 | 62 | 4 | 5 | ------ |  |
| 20 | 32 | 19 | 96 | 68 | 6 | 8 | 8.9 | ●° d ⊤° p. |
| 21 | 31.6 | 19.2 | 96 | 68 | 5 | 9 | 2 | d ●° p. |
| 22 | 30.5 | 19.5 | 97 | 65 | 8 | 9 | ------ |  |
| 23 | 30 | 20.3 | 98 | 67 | 8 | 9 | ------ |  |
| 24 | 31 | 20 | 97 | 61 | 5 | 8 | ------ |  |
| 25 | 32 | 20.2 | 96 | 88 | 6 | 9 | 6.5 | ●° d p. |
| 26 | 25 | ------ | 96 | ------ | 9 | 10 | 10.2 | d a. p. ●° p. |
| 27 | 28.7 | 21.2 | 93 | 70 | 9 | 10 | ------ |  |
| 28 | 31 | 20.1 | 98 | 74 | 7 | 9 | ------ |  |
| 29 | 31.8 | 20 | 96 | 63 | 5 | 8 | ------ |  |
| 30 | 31 | 22.4 | 85 | 63 | 6 | 8 | ------ |  |
| 31 | 31 | 21.4 | 93 | 66 | 9 | 9 | ------ |  |
| Mean | 30.4 | 19.7 | 96.3 | 69.5 | 6.9 | 8.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 86.8 |  |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.1 | 18.7 | 96 | 61 | 2 | 5 | ------ |  |
| 2 | 28.4 | 19 | 91 | 71 | 9 | 8 | ------ |  |
| 3 | 32.3 | 18.9 | 95 | 54 | 4 | 6 | ------ |  |
| 4 | 31.8 | 19.6 | 91 | 54 | 1 | 4 | ------ |  |
| 5 | 32.5 | 19.5 | 92 | 44 | 1 | 3 | ------ |  |
| 6 | 32.3 | 19.2 | 94 | 50 | 1 | 4 | ------ |  |
| 7 | 32.5 | 17.8 | 91 | 59 | 1 | 4 | ------ |  |
| 8 | 32.8 | 18 | 94 | 40 | 1 | 3 | ------ |  |
| 9 | 31.8 | 16.3 | 90 | 57 | 4 | 6 | ------ |  |
| 10 | 33 | 16.5 | 95 | 51 | 1 | 5 | ------ |  |
| 11 | 31.4 | 20 | 91 | 75 | 4 | 7 | 0.3 | d p. |
| 12 | 32 | 21.8 | 96 | 79 | 6 | 7 | 1.5 | d² a. ⊤ a. p. |
| 13 | 33.8 | 22.3 | 90 | 46 | 3 | 3 | ------ |  |
| 14 | 34.9 | 23.2 | 91 | 50 | 2 | 3 | ------ |  |
| 15 | 35.6 | 21.1 | 91 | 48 | 1 | 4 | ------ |  |
| 16 | 35.4 | 22.8 | 90 | 43 | 3 | 4 | ------ |  |
| 17 | 35.7 | 20.7 | 93 | 54 | 2 | 4 | ------ |  |
| 18 | 34.4 | 21.1 | 93 | 73 | 3 | 5 | ------ | ⊤ p. |
| 19 | 35.5 | 22.3 | 90 | 59 | 4 | 6 | ------ |  |
| 20 | 32.8 | 22.3 | 86 | 90 | 7 | 10 | 5.6 | ● p. |
| 21 | 34.3 | 21.1 | 95 | 46 | 3 | 3 | ------ | ≡° a. |
| 22 | 35 | 20.7 | 89 | 51 | 3 | 5 | ------ |  |
| 23 | 34.8 | 19 | 92 | 48 | 3 | 5 | ------ |  |
| 24 | 34.7 | 21 | 90 | 54 | 3 | 4 | ------ |  |
| 25 | 33.1 | 20.4 | 95 | 71 | 3 | 8 | ------ | ⊤ p. |
| 26 | 29.4 | 22.1 | 85 | 73 | 6 | 10 | 5.4 | ● a. d p. |
| 27 | 34 | 22.2 | 88 | 54 | 6 | 7 | ------ |  |
| 28 | 33 | 21.2 | 93 | 57 | 4 | 6 | ------ |  |
| 29 | 33.8 | 22.4 | 83 | 48 | 5 | 4 | ------ |  |
| 30 | 34 | 22.1 | 85 | 46 | 3 | 4 | ------ |  |
| 31 | 34.6 | 20.3 | 89 | 51 | 3 | 5 | ------ |  |
| Mean | 33.3 | 20.4 | 91.1 | 56.7 | 3.3 | 5.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 12.8 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.3 | 17.5 | 98 | 68 | 7 | 8 | ------ | ≡ a. |
| 2 | 31.1 | 17 | 98 | 66 | 10 | 8 | ------ | p° a. |
| 3 | 30.6 | 17.2 | 98 | 69 | 5 | 8 | ------ | Ω ≡ a. |
| 4 | 29.9 | 17 | 98 | 69 | 10 | 7 | ------ | d a. |
| 5 | 30.5 | 17.5 | 97 | 72 | 4 | 8 | ------ | Ω ≡ a. |
| 6 | 29.3 | 17.1 | 98 | 69 | 2 | 6 | ------ | ≡ a. |
| 7 | 31.6 | 17.4 | 97 | 63 | 4 | 7 | ------ | Ω ≡ a. |
| 8 | 31 | 17 | 98 | 65 | 8 | 6 | ------ |  |
| 9 | 31.3 | 15.6 | 97 | 63 | 2 | 3 | ------ | ≡ a. |
| 10 | 32 | 17.4 | 98 | 63 | 7 | 7 | ------ |  |
| 11 | 31.8 | 16.6 | 98 | 68 | 8 | 7 | ------ | Ω a. |
| 12 | 28.9 | 15.3 | 97 | 75 | 10 | 10 | 45.5 | ⊤° a. ● a. p. |
| 13 | 27.8 | 21 | 98 | 74 | 9 | 5 | ------ | Ω ≡ a. |
| 14 | 29 | 21.3 | 98 | 72 | 2 | 4 | ------ |  |
| 15 | 30.5 | 20.2 | 97 | 66 | 3 | 7 | ------ |  |
| 16 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 17 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 18 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 19 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 20 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 21 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 22 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 23 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 24 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 27 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 28 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 31 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| Mean | 30.4 | 17.7 | 97.7 | 68.1 | 6.1 | 6.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### STA. CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.4 | 21.5 | 96 | 54 | 9 | 2 | 0.5 | Ω a. |
| 2 | 31.1 | 20.6 | 96 | 77 | 10 | 9 | .5 | ●° a. |
| 3 | 26.8? | 18.9 | 91 | 68 | 1 | 4 | 4.3 | d a. p. ⌒ p. |
| 4 | 29.2 | 20.5 | 93 | 65 | 9 | 7 | .5 | ● d a. |
| 5 | 29.2? | 20.4 | 82 | 52 | 2 | 2 | ------ | Ω a. |
| 6 | 30.3 | 19.4 | 93 | 58 | 1 | 2 | ------ | Ω a. |
| 7 | 30.9 | 17.9 | 99 | 46 | 1 | 2 | ------ | Ω² ≡² a. |
| 8 | 30.7 | 18.1 | 96 | 50 | 1 | 4 | ------ | Ω² a. |
| 9 | 30.5 | 17.2 | 99 | 51 | 1 | 2 | ------ | Ω ≡² a. |
| 10 | 30.4? | 18.6 | 93 | 51 | 0 | 7 | ------ | Ω° a. ⋓ ⊕ p. |
| 11 | 31.5 | 19.2 | 91 | 77 | 7 | 9 | 1.3 | Ω° a. d Γ↯° ●° p. |
| 12 | 30.4 | 22.6 | 91 | 78 | 8 | 9 | 13.7 | ● ⊤ a. |
| 13 | ------ | 22.1 | 90 | 65 | 2 | 1 | ------ | Ω ⌒° a. |
| 14 | 31.2 | 21.6 | 92 | 67 | 1 | 3 | ------ | Ω² a. |
| 15 | 31.5 | 21.4 | 88 | 57 | 1 | 2 | ------ | Ω° a. |
| 16 | 32 | 21.1 | 97 | 59 | 6 | 7 | ------ | Ω ∞ a. |
| 17 | 32.9 | 20.7 | 97 | 63 | 1 | 6 | ------ | Ω a. ↯ ⋓ p. |
| 18 | 32.7 | 21.4 | 98 | 59 | 4 | 3 | 1.3 | Ω a. Γ↯° ●° p. |
| 19 | 33.8 | 22.2 | 97 | 60 | 9 | 3 | 11.4 | Ω a. ↯ p. |
| 20 | ------ | 20.7 | 96 | 87 | 10 | 9 | 26.9 | ● a. p. |
| 21 | ------ | 21.6 | 94 | 56 | 4 | 2 | ------ | Ω a. |
| 22 | 31 | 21.3 | 93 | 54 | 1 | 1 | ------ | Ω² a. |
| 23 | 31 | 19.9 | 96 | 61 | 2 | 4 | ------ | Ω a. |
| 24 | 31.2 | 21 | 96 | 59 | 3 | 5 | ------ | Ω a. ↯ p. |
| 25 | 31.2 | 20.9 | 98 | 66 | 4 | 4 | 7.9 | Ω² d a. |
| 26 | 30.9 | 22 | 98 | 80 | 10 | 10 | 11.5 | ● a. ●° p. |
| 27 | 28.9 | 21.6 | 97 | 73 | 9 | 9 | .6 | ● a. d p. |
| 28 | 30.4 | 21.4 | 95 | 63 | 8 | 7 | .1 | ●° ⌒° a. d a. p. |
| 29 | 30.8 | 22.9 | 89 | 61 | 8 | 5 | .2 | d a. p. p° p. |
| 30 | 30.8 | 22 | 86 | 56 | 4 | 4 | ------ | p° a. |
| 31 | 30.5 | 19.6 | 96 | 56 | 4 | 4 | ------ | Ω² ∞ a. |
| Mean | 30.8? | 20.7 | 94 | 62.2 | 4.5 | 4.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 80.7 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.1 | 18.6 | 91 | 43 | 2 | 4 | ------ | Ω² a. |
| 2 | 28.8 | 20.2 | 94 | 73 | 10 | 9 | ------ | d° a. |
| 3 | 30.4 | 18.4 | 83 | 61 | 1 | 7 | ------ | Ω° a. d° p. |
| 4 | 29.9 | 20.4 | 89 | 62 | 10 | 7 | ------ | d° a. |
| 5 | 31.2 | 19.8 | 77 | 44 | 1 | 1 | ------ | |
| 6 | 31.4 | 18 | 74 | 48 | 1 | 7 | ------ | |
| 7 | 32 | 18.4 | 82 | 38 | 1 | 3 | ------ | |
| 8 | 31.8 | 17.1 | 75 | 38 | 1 | 1 | ------ | |
| 9 | 32 | 17 | 82 | 59 | 1 | 7 | ------ | |
| 10 | 32.4 | 17.4 | 74 | 43 | 1 | 3 | ------ | Ψ p. |
| 11 | 33.2 | 20 | 78 | 54 | 3 | 8 | 0.5 | d° p. |
| 12 | 29.8 | 21.4 | 93 | 56 | 8 | 8 | 5.1 | ⊤ ● a. d a. p. |
| 13 | 33.6 | 21.4 | 89 | 37 | 1 | 1 | ------ | |
| 14 | 33.5 | 20.8 | 81 | 47 | 1 | 4 | ------ | Ω° a. |
| 15 | 33.9 | 21.1 | 80 | 46 | 1 | 1 | ------ | |
| 16 | 34.9 | 19.8 | 85 | 49 | 2 | 2 | ------ | |
| 17 | 34.1 | 20.7 | 79 | 56 | 1 | 5 | 2.8 | ●° p. |
| 18 | 33.8 | 21.9 | 94 | 55 | 9 | 4 | ------ | |
| 19 | 32.2 | 21.3 | 86 | 80 | 1 | 9 | 7.1 | ● p. |
| 20 | 26.2 | 20.7 | 95 | 82 | 10 | 10 | 13.3 | d a. ●° a. p. |
| 21 | 31.9 | 20.4 | 85 | 52 | 2 | 3 | ------ | |
| 22 | 32.4 | 19.4 | 88 | 54 | 1 | 8 | ------ | Ω a. |
| 23 | 32.7 | 20.3 | 75 | 48 | 3 | 8 | ------ | |
| 24 | 32.9 | 20.5 | 91 | 48 | 8 | 7 | ------ | |
| 25 | 32.7 | 20.7 | 84 | 54 | 10 | 9 | ------ | |
| 26 | 30.4 | 22.5 | 76 | 60 | 10 | 10 | 1.5 | ● p. |
| 27 | 32.2 | 21.5 | 87 | 56 | 9 | 10 | 1.8 | ●° ⌒ p. |
| 28 | 32.2 | 20.4 | 90 | 58 | 5 | 9 | ------ | Ω° a. |
| 29 | 32.3 | 22 | 76 | 41 | 3 | 6 | ------ | |
| 30 | 32.4 | 20.9 | 77 | 42 | 8 | 6 | ------ | |
| 31 | 33.4 | 19.5 | 90 | 42 | 8 | 6 | ------ | Ω a. |
| Mean | 32 | 20.1 | 83.9 | 52.5 | 4.3 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 32.1 | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.7 | 16.2 | 97 | 57 | 5 | 4 | ------ | ≡ a. |
| 2 | 30 | 15.9 | 91 | 52 | 4 | 4 | ------ | |
| 3 | 33 | 16 | 93 | 57 | 8 | 4 | ------ | ⊕° p. |
| 4 | 33.5 | 21.5 | 74 | 49 | 7 | 10 | ------ | |
| 5 | 32.4 | 21 | 77 | 59 | 1 | 3 | ------ | |
| 6 | 30.9 | 16.5 | 89 | 52 | 2 | 2 | ------ | |
| 7 | 30.1 | 17.1 | 94 | 61 | 1 | 5 | ------ | |
| 8 | 32.1 | 17.5 | 86 | 52 | 1 | 1 | ------ | |
| 9 | 30.5 | 16.5 | 97 | 57 | 1 | 3 | ------ | ≡ a. |
| 10 | 30.9 | 16.4 | 93 | 48 | 1 | 4 | ------ | |
| 11 | 31.5 | 16.9 | 92 | 54 | 4 | 4 | ------ | |
| 12 | 32.5 | 21.3 | 90 | 77 | 10 | 10 | 4 | d a. ● p. |
| 13 | 32.3 | 20.7 | 94 | 64 | 1 | 4 | ------ | |
| 14 | 34 | 19.6 | 91 | 65 | 4 | 2 | ------ | |
| 15 | 31.9 | 18.5 | 96 | 62 | 1 | 3 | ------ | ≡° Ω a. |
| 16 | 32 | 18.8 | 96 | 62 | 2 | 2 | ------ | ≡° Ω a. |
| 17 | 31.8 | 20.5 | 94 | 60 | 5 | 8 | ------ | ⌈↯° p. |
| 18 | 32 | 20.5 | 95 | 65 | 6 | 5 | ------ | ≡° a. |
| 19 | 32.5 | 18.5 | 95 | 63 | 3 | 9 | ------ | ≡° a. ⊤ ↯ p. |
| 20 | 31.5 | 20.5 | 91 | 64 | 5 | 8 | ------ | ⊤° p. |
| 21 | 31.5 | 20 | 92 | 61 | 3 | 4 | ------ | |
| 22 | 32 | 19.7 | 89 | 59 | 3 | 5 | ------ | |
| 23 | 32.2 | 19.5 | 97 | 62 | 6 | 6 | ------ | ≡ a. |
| 24 | 31.2 | 22.5 | 86 | 83 | 10 | 10 | 17.7 | ● ⌈↯² p. |
| 25 | 31 | 21.4 | 93 | 66 | 8 | 10 | 11.9 | ⊤ ● ↯ p. |
| 26 | 31 | 21.5 | 89 | 65 | 5 | 10 | 1.2 | d ●° ⌈↯ p. |
| 27 | 32 | 22.7 | 87 | 69 | 10 | 10 | 17.5 | d ● ⌈↯ p. |
| 28 | 31.5 | 20.8 | 97 | 64 | 6 | 10 | 9.4 | d ● ⊤ ↯ p. |
| 29 | 31.1 | 21.4 | 84 | 65 | 2 | 4 | ------ | ⊕° a. p. |
| 30 | 33 | 22.3 | 81 | 56 | 4 | 2 | ------ | ⊕° a. p. |
| 31 | 31 | 18.2 | 90 | 61 | 3 | 3 | ------ | |
| Mean | 31.7 | 19.4 | 90.6 | 61 | 4.3 | 5.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 61.7 | |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 34 | 20.3 | 89 | 45 | 3 | 3 | ------ | Ω a. |
| 2 | 33? | 19.2 | 89 | 38 | 7 | 4 | ------ | Ω a. |
| 3 | 32 | 20.5 | 87 | 54 | 9 | 9 | ------ | d a. |
| 4 | 33.1 | 18.4 | 91 | 43 | 8 | 7 | ------ | Ω a. |
| 5 | 34 | 18.3 | 92 | 38 | 4 | 7 | ------ | Ω a. |
| 6 | 34.7 | 17.6 | 95 | 37 | 2 | 4 | ------ | Ω a. |
| 7 | 33.6 | 19.8 | 92 | 48 | 3 | 4 | ------ | Ω a. |
| 8 | 34.6 | 17 | 85 | 37 | 2 | 4 | ------ | Ω a. |
| 9 | 34.5 | 17.4 | 85 | 37 | 2 | 3 | ------ | Ω a. |
| 10 | 35 | 17 | 94 | 39 | 2 | 3 | ------ | Ω a. |
| 11 | 36.5 | 18.4 | 94 | 40 | 2 | 4 | ------ | Ω a. |
| 12 | 35 | 19.1 | 93 | 43 | 3 | 3 | 1.3 | Ω a. |
| 13 | 35 | 20.4 | 95 | 41 | 4 | 2 | ------ | d ≡° a. |
| 14 | 36 | 21 | 87 | 38 | 3 | 2 | ------ | Ω a. |
| 15 | 36.6 | 19.3 | 91 | 41 | 2 | 3 | ------ | Ω a. |
| 16 | 36.6 | 21 | 95 | 41 | 2 | 3 | ------ | Ω a. |
| 17 | 37 | 23.8 | 96 | 40 | 8 | 7 | 3.8 | Ω a. ● ⌈↯ ⌒ p. |
| 18 | 37 | 22.5 | 94 | 43 | 7 | 8 | .8 | d p. |
| 19 | 36.5 | 21.4 | 90 | 46 | 2 | 8 | ------ | Ω a. |
| 20 | 33 | 22.6 | 90 | 59 | 7 | 9 | ------ | |
| 21 | 33.6 | 20.9 | 95 | 49 | 3 | 3 | ------ | Ω a. |
| 22 | 35 | 20.5 | 95 | 44 | 4 | 4 | ------ | Ω ≡° a. |
| 23 | 36 | 20 | 97 | 43 | 3 | 2 | ------ | Ω a. |
| 24 | 35.6 | 22.4 | 94 | 43 | 4 | 9 | 9.1 | Ω a. ● ⌈↯ p. |
| 25 | 32 | 21.8 | 91 | 62 | 3 | 9 | ------ | Ω a. d p. |
| 26 | 33.6 | 22.4 | 90 | 53 | 9 | 9 | ------ | |
| 27 | 32.6 | 22.9 | 86 | 54 | 9 | 9 | ------ | Ω a. d° p. |
| 28 | 34.2 | 22 | 88 | 45 | 3 | 2 | ------ | Ω a. d p. |
| 29 | 34.6 | 21.2 | 90 | 39 | 4 | 3 | ------ | Ω a. |
| 30 | 35.7 | 19.9 | 90 | 41 | 4 | 2 | ------ | Ω a. |
| 31 | 35.1 | 19.1 | 89 | 40 | 3 | 3 | ------ | Ω a. |
| Mean | 34.7 | 20.3 | 91.3 | 43.9 | 4.2 | 4.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 15 | |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | 20.4 | 95 | 66 | 10 | 2 | ------ | Ω a. |
| 2 | ------ | 21.3 | 92 | 61 | 10 | 7 | ------ | |
| 3 | ------ | 19.7 | 91 | 68 | 10 | 10 | ------ | |
| 4 | ------ | 20.9 | 82 | 94 | 10 | 10 | 43.4 | ● a. p. |
| 5 | ------ | 20.4 | 97 | 82 | 10 | 5 | 4.6 | ● a. |
| 6 | ------ | 17.9 | 95 | 70 | 10 | 9 | ------ | Ω ≡° a. |
| 7 | ------ | 19.1 | 95 | 72 | 10 | 2 | ------ | Ω a. |
| 8 | ------ | 17 | 92 | 65 | 10 | 1 | ------ | Ω a. Ψ p. |
| 9 | ------ | 17.5 | 93 | 67 | 10 | 1 | ------ | Ω a. |
| 10 | ------ | 18.4 | 94 | 66 | 10 | 3 | ------ | |
| 11 | ------ | 19.7 | 93 | 70 | 10 | 10 | 14.7 | Ψ ● ↯ p. |
| 12 | ------ | 21.9 | 95 | 95 | 10 | 10 | 54.8 | ● ⊤ a. Ψ ● p. |
| 13 | ------ | 21.7 | 96 | 77 | 10 | 1 | ------ | ∞ d° a. |
| 14 | ------ | 21.7 | 96 | 71 | 10 | 9 | 1.8 | Ω a. d² p. |
| 15 | ------ | 21.5 | 95 | 72 | 10 | 2 | ------ | |
| 16 | ------ | 19.8 | 83 | 67 | 10 | 1 | ------ | |
| 17 | ------ | 21.9 | 95 | 62 | 10 | 1 | ------ | ↯ p. |
| 18 | ------ | 21.9 | 93 | 73 | 10 | 4 | ------ | |
| 19 | ------ | 22.2 | 95 | 73 | 10 | 10 | 1.8 | ● p. |
| 20 | ------ | 23.3 | 82 | 71 | 10 | 9 | 46 | ● p. |
| 21 | ------ | 22.1 | 97 | 82 | 10 | 10 | 1.5 | ● a. |
| 22 | ------ | 21.2 | 96 | 74 | 10 | 10 | ------ | ∞ p. |
| 23 | ------ | 21 | 95 | 75 | 10 | 10 | ------ | Ω a. |
| 24 | ------ | 22.4 | 95 | 76 | 10 | 9 | ------ | Ω ∞ a. |
| 25 | ------ | 23.5 | 93 | 80 | 10 | 10 | 35.8 | p a. ● p. |
| 26 | ------ | 22.7 | 75 | 74 | 10 | 10 | 11.9 | ● p. |
| 27 | ------ | 22.8 | 83 | 74 | 10 | 10 | .3 | ● a. d p. |
| 28 | ------ | 23.2 | 93 | 80 | 10 | 10 | 14 | ● a. p. |
| 29 | ------ | 23.5 | 81 | 73 | 10 | 9 | ------ | |
| 30 | ------ | 24.4 | 82 | 68 | 10 | 1 | ------ | |
| 31 | ------ | 21.5 | 95 | 69 | 10 | 6 | ------ | |
| Mean | ------ | 21.2 | 91.4 | 73.1 | 10 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 230.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 28 | 19.7 | 82 | 59 | 1 | 1 | ------ | $\Omega^{0}$ a. |
| 2 | 29.7 | 16.1 | 92 | 54 | 1 | 1 | ------ | $\Omega^{2}$ a. |
| 3 | 29.8 | 20.5 | 86 | 54 | 3 | 1 | ------ | $\Omega^{0}$ a. |
| 4 | 30.2 | 19.8 | 87 | 54 | 1 | 3 | ------ | |
| 5 | 30.2 | 21 | 86 | 56 | 2 | 2 | ------ | $\Omega^{0}$ a. |
| 6 | 32.8 | 19 | 96 | 63 | 3 | 1 | ------ | $\equiv^{0}$ a. |
| 7 | 30.6 | 19.8 | 91 | 62 | 3 | 3 | ------ | $\Omega^{0}$ a. |
| 8 | 31.6 | 21.8 | 87 | 64 | 6 | 2 | ------ | |
| 9 | 31.7 | 22.1 | 90 | 54 | 4 | 3 | ------ | |
| 10 | 31.4 | 20.5 | 95 | 53 | 2 | 3 | ------ | $\equiv^{0}$ a. |
| 11 | 31.1 | 19.9 | 89 | 58 | 1 | 2 | ------ | $\Omega^{0}$ a. |
| 12 | 32.9 | 21 | 93 | 64 | 5 | 6 | ------ | |
| 13 | 32.4 | 20.2 | 86 | 61 | 1 | 2 | ------ | |
| 14 | 32.3 | 20.8 | 91 | 64 | 1 | 1 | ------ | |
| 15 | 31.7 | 21.8 | 90 | 61 | 1 | 1 | ------ | |
| 16 | 33 | 21 | 85 | 62 | 1 | 1 | ------ | |
| 17 | 31.8 | 20.9 | 82 | 69 | 1 | 1 | ------ | $\Phi^{2}$ p. |
| 18 | 32.3 | 22.2 | 91 | 76 | 6 | 1 | ------ | |
| 19 | 31.9 | 21.7 | 97 | 70 | 5 | 3 | ------ | |
| 20 | 33.7 | 22.7 | 86 | 59 | 1 | 1 | ------ | |
| 21 | 33.2 | 21.4 | 98 | 63 | 1 | 1 | ------ | |
| 22 | 32.1 | 21.8 | 84 | 67 | 2 | 2 | ------ | |
| 23 | 31.9 | 22 | 96 | 62 | 3 | 2 | ------ | |
| 24 | 31.8 | 23 | 97 | 65 | 5 | 6 | ------ | $d^{0}$ p. |
| 25 | 31.2 | 22.4 | 90 | 63 | 5 | 7 | ------ | $d^{0}$ p. |
| 26 | 33.8 | 22 | 96 | 61 | 5 | 3 | ------ | $d^{0}$ $\zeta^{0}$ $\frown^{2}$ p. |
| 27 | 31.5 | 23.5 | 91 | 72 | 9 | 10 | ------ | $d^{0}$ $T^{0}$ p. |
| 28 | 33 | 22.4 | 97 | 65 | 1 | 1 | ------ | $T^{0}$ $d^{0}$ p. |
| 29 | 33.3 | 23 | 89 | 65 | 1 | 1 | ------ | |
| 30 | 32.1 | 21.3 | 87 | 63 | 1 | 1 | ------ | |
| 31 | 32.9 | 21 | 89 | 60 | 1 | 2 | ------ | |
| Mean | 31.8 | 21.2 | 90.2 | 62 | 2.7 | 2.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 29.6 | 20.1 | 99 | 58 | 10 | 3 | ------ | |
| 2 | 27.6 | 18.6 | 99 | 63 | 4 | 9 | ------ | $\Omega^{2}$ a. |
| 3 | 26.5 | 18.8 | 99 | 66 | 10 | 9 | 3 | $d^{0}$ a. $d^{2}$ p. |
| 4 | 27.8 | 18.9 | 98 | 64 | 10 | 10 | ------ | $d^{2}$ a. $d^{0}$ p. |
| 5 | 29.8 | 19.8 | 98 | 54 | 10 | 4 | ------ | |
| 6 | 32.1 | 17.6 | 97 | 47 | 2 | 2 | ------ | $\Omega^{2}$ a. |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 11 | ------ | ------ | ------ | ------ | ------ | ------ | 6.6 | |
| 12 | 26.6 | 21.5 | 98 | 84 | 10 | 10 | ------ | $\bullet^{0}$ a. $d^{0}$ a. p. |
| 13 | 33.3 | 18.9 | 98 | 48 | 4 | 1 | ------ | $\Omega^{2}$ a. |
| 14 | 33.3 | 18.8 | 98 | 48 | 2 | 2 | ------ | $\Omega^{2}$ a. |
| 15 | 33.4 | 18.7 | 98 | 47 | 2 | 2 | ------ | $\Omega^{2}$ a. |
| 16 | 34.4 | 19.4 | 98 | 47 | 2 | 1 | ------ | $\Omega^{2}$ a. |
| 17 | 33.5 | 21.4 | 97 | 50 | 10 | 1 | ------ | $\Omega^{0}$ a. $\zeta^{0}$ p. |
| 18 | 33.7 | 22.2 | 97 | 51 | 10 | 1 | ------ | $\Omega^{0}$ a. |
| 19 | 31.6 | 22.8 | 97 | 57 | 10 | 6 | ------ | $\zeta^{0}$ p. |
| 20 | 29.8 | 20.4 | 97 | 57 | 10 | 4 | ------ | |
| 21 | 32 | 19.6 | 97 | 54 | 5 | 2 | ------ | $\Omega^{0}$ a. |
| 22 | 32.6 | 19 | 97 | 52 | 6 | 2 | ------ | $\Omega^{0}$ $\equiv^{0}$ a. |
| 23 | 31.8 | 21.9 | 96 | 58 | 10 | 6 | ------ | |
| 24 | 30.4 | 22.9 | 97 | 66 | 10 | 10 | 2.8 | $d^{0}$ a. $T^{0}$ p. |
| 25 | 29.5 | 21.2 | 98 | 70 | 10 | 10 | 2.5 | $d^{2}$ a. $T^{0}$ $d^{0}$ p. |
| 26 | 29.8 | 21.3 | 98 | 63 | 10 | 9 | ------ | $d^{2}$ a. |
| 27 | 30.1 | 21.5 | 97 | 64 | 10 | 8 | 1.8 | $\Omega^{0}$ $d^{2}$ a. |
| 28 | 29.9 | 21.6 | 98 | 67 | 10 | 10 | 15.5 | $d^{2}$ a. p. $\bullet^{2}$ $T^{0}$ p. |
| 29 | 30.6 | 19.9 | 99 | 56 | 8 | 4 | ------ | $\equiv^{2}$ a. |
| 30 | 32.3 | 18.6 | 97 | 51 | 4 | 3 | ------ | $\Omega^{2}$ $\equiv^{0}$ a. |
| 31 | 32.9 | 18.4 | 98 | 48 | 4 | 3 | ------ | $\Omega^{2}$ a. |
| Mean | 31 | 20.1 | 97.7 | 57.3 | 7.4 | 5.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 32.2[1] | |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 26.1 | 17.7 | 80 | 59 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 2 | 28.1 | 16.5 | 80 | 56 | 2 | 1 | ------ | $\Omega^{2}$ a. |
| 3 | 28.5 | 20.5? | 69 | 57 | 8 | 7 | ------ | $\Omega$ a. |
| 4 | 28.8 | 20.6 | 74 | 65 | 4 | 8 | ------ | $\Omega$ a. |
| 5 | 29.9 | 23 | 81 | 62 | 7 | 2 | ------ | $\Omega$ a. |
| 6 | 30 | 22 | 74 | 54 | 10 | 0 | ------ | $\Omega^{0}$ a. |
| 7 | 30.1 | 20.6 | 76 | 61 | 1 | 3 | ------ | $\Omega^{2}$ a. |
| 8 | 29.2 | 22.1 | 79 | 58 | 7 | 6 | ------ | $\Omega^{2}$ a. |
| 9 | 30 | 23 | 76 | 61 | 8 | 2 | ------ | |
| 10 | 28.7 | 23 | 78 | 57 | 3 | 9 | ------ | $\Omega^{2}$ a. |
| 11 | 29.7 | 20.7 | 77 | 57 | 1 | 0 | ------ | $\Omega^{2}$ a. |
| 12 | 30.9 | 22.5 | 70 | 62 | 2 | 6 | 1 | $\Omega$ a. $\Gamma\zeta^{0}$ p p. |
| 13 | 31.4 | 22.1 | 78 | 55 | 0 | 1 | ------ | $\Omega^{2}$ a. |
| 14 | 30.7 | 23.6 | 76 | 60 | 6 | 2 | ------ | $\Omega$ a. |
| 15 | 30.7 | 22.5 | 79 | 59 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 16 | 30.8 | 22.5 | 76 | 59 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 17 | 30.7 | 23.4 | 75 | 58 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 18 | 30.7 | 23.9 | 75 | 62 | 4 | 0 | ------ | $\Omega^{0}$ a. |
| 19 | 29.8 | 22 | 77 | 58 | 4 | 0 | ------ | $\Omega^{2}$ a. |
| 20 | 30.8 | 22 | 70 | 55 | 8 | 1 | ------ | $\oplus$ a. p. |
| 21 | 30.4 | 23.1 | 75 | 57 | 2 | 0 | ------ | $\Omega$ a. |
| 22 | 30.7 | 21.9 | 74 | 59 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 23 | 30.6 | 22.9 | 75 | 53 | 0 | 0 | ------ | $\Omega^{2}$ $\oplus$ a. |
| 24 | 29.7 | 23.5 | 77 | 67 | 2 | 9 | ------ | $\Omega^{2}$ a. $T^{0}$ p. |
| 25 | 30.3 | 23.5 | 74 | 55 | 9 | 10 | 24.6 | $\Omega$ a. $T^{0}$ $\bullet^{2}$ p. |
| 26 | 29.7 | 23.4 | 78 | 65 | 4 | 6 | ------ | d a. p. $T^{0}$ p. |
| 27 | 29.9 | 23.6 | 76 | 66 | 8 | 9 | ------ | d $T$ $\frown^{0}$ $\zeta$ p. |
| 28 | 31.2 | 22.5 | 82 | 56 | 3 | 4 | ------ | $\Omega^{2}$ a. |
| 29 | 30.7 | 23.6 | 81 | 61 | 3 | 4 | ------ | $\Omega^{2}$ a. |
| 30 | 30.8 | 22 | 77 | 46 | 2 | 0 | ------ | $\Omega^{2}$ a. |
| 31 | 30.6 | 21.6? | 78 | 49 | 0 | 2 | ------ | $\Omega^{2}$ a. |
| Mean | 30 | 22.1 | 76.4 | 58.4 | 3.5 | 3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 25.6 | |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0-10.* | *0-10.* | *mm.* | |
| 1 | 28.4 | ------ | 96 | 54 | 0 | 2 | ------ | $\Omega^{2}$ $\equiv^{0}$ a. |
| 2 | 32.3 | ------ | 90 | 41 | 0 | 3 | ------ | $\Omega^{2}$ a. |
| 3 | 31 | ------ | 84 | 41 | 1 | 4 | ------ | $\Omega$ a. |
| 4 | 32.2 | ------ | 83 | 55 | 0 | 2 | ------ | |
| 5 | 31 | ------ | 84 | 59 | 10 | 4 | ------ | |
| 6 | 32.3 | ------ | 87 | 53 | 9 | 3 | ------ | |
| 7 | 32.2 | ------ | 92 | 54 | 0 | 3 | ------ | $\Omega$ a. |
| 8 | 32.4 | ------ | 91 | 50 | 0 | 2 | ------ | $\Omega$ a. |
| 9 | 32.3 | ------ | 87 | 59 | 8 | 3 | ------ | |
| 10 | 30.8 | ------ | 94 | 58 | 1 | 6 | ------ | $\Omega^{2}$ a. |
| 11 | 36.5 | ------ | 93 | 44 | 0 | 1 | ------ | $\Omega^{2}$ a. |
| 12 | 35.3 | ------ | 76 | 55 | 3 | 5 | ------ | $\Gamma\zeta$ p. |
| 13 | 32.3 | ------ | 92 | 56 | 0 | 1 | ------ | $\Omega$ a. |
| 14 | 32.8 | ------ | 95 | 60 | 0 | 2 | ------ | $\Omega^{2}$ $\equiv^{0}$ a. |
| 15 | 32.7 | ------ | 96 | 63 | 0 | 3 | ------ | $\Omega^{2}$ $\equiv^{0}$ a. |
| 16 | 32.1 | ------ | 96 | 59 | 0 | 2 | ------ | $\Omega^{2}$ $\equiv^{0}$ a. |
| 17 | 32 | ------ | 91 | 61 | 0 | 2 | ------ | $\Omega$ a. |
| 18 | 32.1 | ------ | 89 | 62 | 0 | 4 | ------ | $\Omega$ a. |
| 19 | 33.3 | ------ | 91 | 51 | 0 | 3 | ------ | $\Omega^{2}$ a. |
| 20 | 32.4 | ------ | 82 | 53 | 0 | 5 | ------ | $\Omega$ a. |
| 21 | 31.9 | 21.3 | 88 | 64 | 9 | 8 | ------ | |
| 22 | 32.4 | 20.6 | 94 | 58 | 0 | 5 | ------ | $\Omega^{2}$ a. |
| 23 | 33.7 | 21 | 94 | 55 | 0 | 9 | ------ | $\Omega$ a. |
| 24 | 34.3 | 24 | 77 | 49 | 8 | 5 | ------ | |
| 25 | 34.6 | 23.4 | 77 | 46 | 7 | 8 | ------ | |
| 26 | 34.9 | 22 | 81 | 45 | 0 | 4 | ------ | |
| 27 | 35.3 | 21 | 82 | 44 | 0 | 3 | ------ | |
| 28 | 36.3 | 21.5 | 81 | 42 | 3 | 3 | ------ | |
| 29 | 35.6 | 22 | 91 | 42 | 0 | 2 | ------ | |
| 30 | 33.2 | 19.2 | 82 | 49 | 0 | 2 | ------ | |
| 31 | 31 | 20 | 81 | 63 | 0 | 2 | ------ | |
| Mean | 32.9 | 21.5 | 87.6 | 53.1 | 1.9 | 3.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

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[1] 26 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### SANTO DOMINGO.

[$\phi=20° 28' N; \lambda=121° 59' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 25.6 | 19 | 85 | 78 | 1 | 8 | ------ | Ω² a. d° p. |
| 2 | 22.7 | 19.4 | 75 | 70 | 8 | 6 | ------ | |
| 3 | 24 | 18.2 | 68 | 66 | 7 | 1 | ------ | |
| 4 | 25.6 | 19.3 | 71 | 64 | 4 | 3 | ------ | |
| 5 | 27.9 | 22.3 | 86 | 66 | 2 | 3 | ------ | |
| 6 | 28.8 | 23.3 | 87 | 73 | 4 | 2 | ------ | v a. |
| 7 | 25.8 | 21.7 | 84 | 79 | 7 | 8 | ------ | Ω p. |
| 8 | 27.4 | 19.4 | 89 | 71 | 1 | 3 | ------ | |
| 9 | 27.9 | 22.3 | 83 | 64 | 3 | 3 | ------ | v a. |
| 10 | 29.4 | 22.4 | 81 | 69 | 3 | 4 | ------ | Ω p. |
| 11 | 26.6 | 20.7 | 90 | 81 | 7 | 8 | 0.8 | Ω a. |
| 12 | 27.8 | 22.7 | 90 | 88 | 6 | 8 | 2.2 | ●° a. p. d p. |
| 13 | 28.9 | 23.8 | 90 | 74 | 1 | 1 | ------ | |
| 14 | 29.3 | 24 | 90 | 74 | 6 | 4 | ------ | Ω p. |
| 15 | 30.4 | 23.3 | 95 | 80 | 2 | 4 | ------ | |
| 16 | 29.8 | 24.2 | 91 | 71 | 4 | 2 | ------ | Ω p. |
| 17 | 28 9 | 22.2 | 91 | 74 | 2 | 1 | ------ | Ω a. p. |
| 18 | 28.9 | 20.5 | 94 | 74 | 1 | 9 | .7 | ●° p. |
| 19 | 22.9 | 20.3 | 74 | 63 | 10 | 10 | .5 | d a. p. |
| 20 | 24.8 | 20.2 | 78 | 70 | 10 | 10 | .4 | d a. |
| 21 | 27.3 | 21.3 | 81 | 67 | 10 | 10 | ------ | |
| 22 | 29 | 23.7 | 86 | 77 | 7 | 10 | ------ | |
| 23 | 25.3 | 22 | 89 | 87 | 7 | 10 | 3.8 | d ●° p. |
| 24 | 22.7 | 19.6 | 78 | 77 | 10 | 8 | ------ | d° p. |
| 25 | 25.2 | 20.2 | 77 | 68 | 2 | 7 | ------ | v a. |
| 26 | 26.2 | 19.8 | 73 | 71 | 2 | 7 | ------ | |
| 27 | 27.6 | 22 | 81 | 67 | 3 | 2 | 2.5 | ● p. |
| 28 | 26.5 | 22.6 | 83 | 88 | 4 | 10 | 5.1 | ● a. ●° p. |
| 29 | 27.9 | 22.8 | 79 | 77 | 4 | 4 | ------ | |
| 30 | 28 | 22.7 | 79 | 69 | 5 | 4 | ------ | |
| 31 | 28.6 | 23 | 82 | 70 | 5 | 5 | ------ | Ω° p. |
| Mean | 27 | 21.6 | 83.2 | 73.1 | 4.8 | 5.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 16 | |

# SEISMOLOGICAL BULLETIN FOR MARCH, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, 13$^{h}$ 16$^{m}$ 0$^{s}$.* **Laoag** (NW of Luzon). Oscillatory earthquake. Direction ENE–WSW; intensity, IV; duration, 6 seconds. It was preceded by subterranean rumbling which seemed to come from east.

6, 7$^{h}$ 20$^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

7, 1$^{h}$ 32$^{m}$ 25$^{s}$.* **Eastern Mindanao.** Earthquake of force IV. Its epicenter was probably near the coast of the Pacific Ocean. We have received data from only three places: Butuan, where the movements were relatively strong, as they stopped several clocks; the southern part of the Davao District, where the disturbance was very perceptible; and Sarangani, where the intensity hardly exceeded II. Sarangani and Butuan are respectively south and north of eastern Mindanao, separated from each other by a distance of approximately 370 kilometers. This earthquake was registered by the seismographs at Manila, Zikawei, Tsingtau, and presumably also by those of Batavia and others in the Far East.

7, 11$^{h}$ 3$^{m}$ 55$^{s}$. **Baguio** (W of Luzon). Earthquake of intensity II. A repetition having the same character occurred at 15$^{h}$ 44$^{m}$ 35$^{s}$.

9, 13$^{h}$ 5$^{m}$ 8$^{s}$.* **Northern, central, and western Mindanao.** Earthquake of force IV. The reports from Butuan, Cotabato, and Zamboanga, and from Dumaguete (SE of Negros Island) show that the epicenter lay probably north of Illana Bay. Though the quake does not seem to have been of great intensity, it was perceptible throughout an area measuring about 500 kilometers in the direction E–W and 400 in that of N–S. It was registered by the Manila seismographs and those of Zikawei.

10, 3$^{h}$ 0$^{m}$. **Cebu** (E of Cebu Island). Earthquake of intensity IV.

13, 2$^{h}$ 0$^{m}$. **Batangas** (S of Luzon). Earthquake of intensity III. At Camp McGrath it was observed to begin with vertical movements, which were quickly followed by horizontal ones having various directions: the whole lasting some 8 seconds. The epicenter does not seem to have been in the Taal Volcano, but southeast of it, near the southern coast of Luzon.

13, 17$^{h}$ 37$^{m}$ 39$^{s}$.* **Camarines Province** (SE of Luzon). Earthquake of force III, having its epicenter probably in the northeastern part of San Miguel Bay. It was felt throughout the northern and central portion of the province. Repetitions of feeble intensities took place at 17$^{h}$ 48$^{m}$ 14$^{s}$,* 17$^{h}$ 52$^{m}$ 56$^{s}$,* 18$^{h}$ 53$^{m}$, 20$^{h}$ 49$^{m}$ 40$^{s}$,* and 20$^{h}$ 53$^{m}$.

17, 21$^{h}$ 45$^{m}$ 20$^{s}$.* **Balanga** (W of Luzon). Oscillatory earthquake. Direction, WSW–ENE; intensity, III; duration, 3 seconds.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

18, $0^{h}$ $30^{m}$. **Sarangani** (S of Mindanao). Earthquake of force II. A repetition occurred at $1^{h}$ $0^{m}$.

20, $19^{h}$ $56^{m}$. **Tacloban** (NE of Leyte). Earthquake of force III, lasting 4 seconds.

21, $17^{h}$ $28^{m}$. **Talacogon** (Agusan Valley, Mindanao). Earthquake of intensity II and short duration.

22, $6^{h}$ $30^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity III. There were repetitions at $9^{h}$, $12^{h}$ $30^{m}$, and $13^{h}$.

22, $6^{h}$ $51^{m}$. **Tacloban** (NE of Leyte). Earthquake of force II.

23, $7^{h}$ $23^{m}$. **Talacogon** (Agusan Valley, Mindanao). Short shocks of force IV.

24, $12^{h}$ $15^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity II, with repetitions at $20^{h}$ and $22^{h}$.

26, $21^{h}$ $9^{m}$. **Tacloban** (NE of Leyte). Oscillatory earthquake of force II. A repetition at $22^{h}$ $16^{m}$ had direction NE–SW and intensity III.

29, $5^{h}$ $39^{m}$. **Butuan and Talacogon** (Agusan Valley, Mindanao). Oscillatory earthquake of intensity III and 7 seconds' duration.

29, $12^{h}$ $18^{m}$ $59^{s}$.* **Baguio** (W of Luzon). Earthquake of intensity III.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=$0.^{h}$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 36 | 1 | $\mathrm{I_d}$ | V. | ---------- | ---------- | 2 03 43 | 2 03 53 | 0.02 | 2.4 | 2 06 | Vertical Component 0.01 mm. |
| 37 | 1 | $\mathrm{I_v}$ | H. WSW | 13 16 00 | ---------- | 13 16 48 | 13 17 00 | .06 | 2.4 | 13 25 | V. C. 0.03 mm. Earthquake, IV at Laoag (NW of Luzon). |
| 38 | 1 | $\mathrm{I_d}$ | V. | 23 52 19 | ---------- | 23 52 29 | 23 52 34 | .06 | 2.4 | 23 54 | V. C. 0.03 mm. |
| 39 | 2 | $\mathrm{I_d}$ | V. | 4 33 11 | ---------- | 4 33 22 | 4 33 28 | .04 | 2.4 | 4 35 | V. C. 0.01 mm. |
| 40 | 3 | $\mathrm{I_d}$ | V. | 1 25 08 | ---------- | 1 25 36 | 1 26 18 | .07 | 2.4 | 1 27 | |
| 41 | 6 | $\mathrm{I_d}$ | V. | 14 31 06 | ---------- | 14 31 18 | 14 31 37 | .16 | 2.4 | 14 37 | V. C 0.13 mm. |
| 42 | 7 | $\mathrm{II_v}$ | H. NNW | 1 32 25 | ---------- | 1 34 31 | 1 36 32 | 1.97 | 8.1 | 2 20 | V. C. 0.10 mm. Eqke., IV, eastern Mindanao. |
| | | | H. WSW | 1 32 25 | ---------- | 1 34 21 | 1 37 52 | 1.72 | 8.1 | 2 42 | |
| 43 | 9 | $\mathrm{I_v}$ | V. | 13 05 10 | ---------- | 13 07 09 | 13 08 06 | .10 | 2.4 | 13 52 | V. C 0.02 mm. Eqke., IV in western and central Mindanao. |
| | | | H. NNW | 13 05 08 | ---------- | 13 07 08 | 13 07 43 | .28 | 7.8 | 13 43 | |
| | | | H. WSW | 13 05 08 | ---------- | 13 07 04 | 13 08 23 | .44 | 9 | 14 00 | |
| 44 | 11 | $\mathrm{I_d}$ | V. | ---------- | ---------- | 0 12 57 | 0 13 15 | .01 | 2.4 | 0 16 | V. C. 0.01 mm. |
| 45 | 11 | $\mathrm{I_d}$ | V. | 8 37 19 | ---------- | 8 37 49 | 8 37 55 | .06 | 2.4 | 8 40 | V. C. 0.04 mm. |
| 46 | 11 | $\mathrm{I_r}$ | V. | 11 22 50 | 11 28 27 | 11 33 04 | 11 34 02 | .01 | 15.6 | 12 08 | |
| | | | H. NNW | 11 22 50 | 11 28 31 | 11 33 06 | 11 34 12 | .07 | 9 | 12 16 | |
| | | | H. WSW | 11 22 50 | 11 28 24 | 11 33 05 | 11 33 56 | .13 | 8.4 | 12 33 | |
| 47 | 12 | $\mathrm{I_d}$ | V. | 2 53 21 | ---------- | 2 53 44 | 2 53 50 | .28 | 2.4 | 2 56 | V. C. 0.06 mm. |
| 48 | 13 | $\mathrm{II_v}$ | V. | 17 37 39 | ---------- | 17 38 02 | 17 38 19 | 1.70 | 2.4 | ---------- | V. C. 1.12 mm. Eqke., III in Camarines (SE of Luzon). |
| | | | H. NNW | 17 37 39 | ---------- | 17 38 05 | 17 38 18 | .71 | 7.2 | ---------- | |
| | | | H. WSW | 17 37 39 | ---------- | 17 38 05 | 17 39 09 | .58 | 9.6 | ---------- | |
| 49 | 13 | $\mathrm{I_v}$ | V. | 17 48 13 | ---------- | 17 48 39 | 17 48 43 | .23 | 2.4 | ---------- | V. C. 0 09 mm. Eqke., III in Camarines (SE of Luzon). |
| 50 | 13 | $\mathrm{I_v}$ | V. | 17 52 56 | ---------- | 17 53 21 | 17 53 34 | 1.30 | 2.4 | 18 28 | V. C. 0.28 mm. Eqke., III in Camarines (SE of Luzon). |
| | | | H. NNW | 17 52 56 | ---------- | 17 53 21 | 17 53 38 | .25 | 7.5 | 18 11 | |
| | | | H. WSW | 17 52 56 | ---------- | 17 53 21 | 17 53 56 | .25 | 8.1 | 18 30 | |
| 51 | 13 | $\mathrm{II_v}$ | V. | 20 49 40 | ---------- | 20 50 08 | 20 50 42 | ---------- | 2.4 | 21 10 | V. C. 1.05 mm. Eqke., III in Camarines (SE of Luzon). |
| | | | H. NNW | 20 49 41 | ---------- | 20 50 07 | 20 51 00 | .37 | 6.9 | 21 07 | |
| | | | H. WSW | 20 49 41 | ---------- | 20 50 07 | 20 50 37 | .42 | 8.1 | 21 14 | |
| 52 | 13 | $\mathrm{I_d}$ | V. | ---------- | ---------- | 22 25 39 | 22 25 43 | .03 | 2.4 | 22 28 | V. C. 0.01 mm. |
| 53 | 13 | I | V. | 22 40 13 | ---------- | ---------- | ---------- | ---------- | ---------- | 23 10 | |
| | | | H. WSW | 22 40 13 | ---------- | ---------- | ---------- | ---------- | ---------- | 23 07 | |
| 54 | 14 | $\mathrm{I_d}$ | V. | 9 57 30 | ---------- | 9 57 38 | 9 57 41 | .05 | 2.4 | 9 59 | V. C. 0 01 mm. |
| 55 | 15 | $\mathrm{II_d}$ | V. | 17 53 00 | ---------- | 17 53 19 | 17 53 35 | .20 | 2.4 | 17 57 | V. C. 0.09 mm. |
| 56 | 16 | $\mathrm{I_d}$ | V. | 14 16 42 | ---------- | 14 17 05 | 14 17 07 | .05 | 2.4 | 14 20 | V. C. 0 02 mm. |
| 57 | 16 | $\mathrm{I_d}$ | V. | 20 42 02 | ---------- | 20 42 29 | 20 42 32 | .58 | 2.4 | 20 50 | V. C. 0.20 mm. |
| 58 | 17 | $\mathrm{I_d}$ | V. | 15 26 25 | ---------- | 15 26 36 | 15 26 44 | .05 | 2.4 | 15 28 | V. C. 0.01 mm. |
| 59 | 17 | $\mathrm{II_v}$ | V. | 21 45 20 | ---------- | 21 45 29 | 21 46 36 | .34 | 2.4 | 21 51 | V. C. 0 17 mm. Eqke., III at Balanga (W of Luzon). |
| 60 | 18 | $\mathrm{I_d}$ | V. | 5 25 35 | ---------- | 5 25 51 | 5 25 57 | .11 | 2.4 | 5 28 | V. C. 0.02 mm. |
| 61 | 21 | $\mathrm{I_d}$ | V. | 7 04 44 | ---------- | 7 04 53 | 7 04 59 | .05 | 2 | 7 07 | V. C. 0.05 mm. |
| 62 | 24 | I | V. | 11 21 26 | ---------- | ---------- | ---------- | ---------- | ---------- | 11 53 | V. C. 0.02 mm. |
| | | | H. NNW | 11 21 28 | ---------- | ---------- | ---------- | ---------- | ---------- | 11 50 | |
| | | | H. WSW | 11 21 28 | ---------- | ---------- | ---------- | ---------- | ---------- | 12 05 | |
| 63 | 27 | I | V. | 17 44 33 | ---------- | 17 48 44 | ---------- | ---------- | ---------- | 18 02 | |
| | | | H. NNW | 17 44 33 | ---------- | 17 48 38 | 17 50 34 | .06 | 8.7 | 18 04 | |
| | | | H. WSW | 17 44 33 | ---------- | 17 48 41 | 17 50 42 | .19 | 8.4 | 18 12 | |
| 64 | 28 | $\mathrm{I_d}$ | V. | 23 06 17 | ---------- | 23 06 34 | 23 07 32 | .19 | 2.4 | 23 11 | V. C. 0.13 mm. |
| 65 | 29 | $\mathrm{I_d}$ | V. | 12 18 59 | ---------- | 12 19 15 | 12 19 23 | .26 | 2.4 | 12 24 | V. C. 0.05 mm. Eqke., III at Baguio (W of Luzon). |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8 seconds; WSW–ENE pendulum, T=8.6 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, $13^h$ $16^m$ $0^s$.* **Laoag** (NW de Luzón). Temblor oscilatorio. Dirección, ENE–WSW; intensidad, IV; duración, 6 segundos. Precedido de ruído subterraneo procedente al parecer del E.

6, $7^h$ $20^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

7, $1^h$ $32^m$ $25^s$.* **Parte oriental de Mindanao.** Temblor de tierra de intensidad IV. Este temblor tuvo probablemente su epicentro cerca de la costa del Pacífico: solamente poseemos datos de Butuan, donde se experimentaron ondulaciones relativamente fuertes que pararon algunos relojes; de la parte S del Distrito de Davao, donde fué muy perceptible; y de Sarangani, donde apenas pasó de intensidad II. Sarangani y Butuan están al S y N respectivamente de la parte oriental de Mindanao y los separa una distancia de 370 kilómetros próximamente. Fué registrado por los seismógrafos de Manila, Zikawei, Tsingtau, y sin duda por los de Batavia y otros del Extremo Oriente.

7, $11^h$ $3^m$ $55^s$. **Baguio** (W de Luzón). Temblor de tierra de intensidad II. Repitió con los mismos carácteres á $15^h$ $44^m$ $35^s$.

9, $13^h$ $5^m$ $8^s$.* **N y parte central y W de Mindanao.** Temblor de tierra de intensidad IV. Los reports de Butuan, Cotabato y Zamboanga, y de Dumaguete, que está al SE de la Isla de Negros, indican que el epicentro de este temblor se hallaba probablemente al N de la Bahía Illana. No parece haber tenido gran intensidad, pero fué perceptible en un área que se extiende aproximadamente 500 kilómetros en dirección E–W y 400 kilótros en la de N–S. Registráronlo los seismógrafos de Manila y Zikawei.

10, $3^h$ $0^m$. **Cebú** (E de la Isla de Cebú). Temblor de tierra de intensidad IV.

13, $2^h$ $0^m$. **Batangas** (S de Luzón). Temblor de tierra de intensidad III. En Camp McGrath el temblor comenzó con movimientos verticales á los que siguieron luego otros horizontales, en varias direcciones, siendo su duración total de unos 8 segundos. El epicentro no parece se hallaba en el volcán Taal sino al SE de él, cerca de la costa S de Luzón.

13, $17^h$ $37^m$ $39^s$.* **Camarines** (SE de Luzón). Temblor de tierra de intensidad III. Su epicentro estaba probablemente en la parte NE de la Bahía de San Miguel: fué perceptible en toda la parte norte y central de la Provincia de Camarines. Repitió con poca intensidad á $17^h$ $48^m$ $13^s$*, $17^h$ $52^m$ $56^s$*, $18^h$ $53^m$, $20^h$ $49^m$ $40^s$*, y $20^h$ $53^m$.

17, $21^h$ $45^m$ $20^s$.* **Balanga** (W de Luzón). Temblor oscilatorio. Dirección, WSW–ENE; intensidad, III; duración, 3 segundos.

18, $0^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II. Repitió á $1^h$ $0^m$.

20, $19^h$ $56^m$. **Tacloban** (NE de Leyte). Temblor de tierra de intensidad III; duración, 4 segundos.

21, $17^h$ $28^m$. **Talacogon** (Valle del Agusan, Mindanao). Temblor de intensidad II; duración corta.

22, $6^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III. Repeticiones á $9^h$, $12^h$ $30^m$, y $13^h$.

22, $20^h$ $51^m$. **Tacloban** (NE de Leyte). Temblor de intensidad II.

23, $7^h$ $23^m$. **Talacogon** (Valle del Agusan, Mindanao). Sacudidas cortas de intensidad IV.

24, $12^h$ $15^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II. Repitió á $20^h$ y $22^h$.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

26, 21$^h$ 9$^m$. **Tacloban** (NE de Leyte). Temblor oscilatorio de intensidad II. Repitió á 22$^h$ 16$^m$ con dirección NE–SW é intensidad III.

29, 5$^h$ 39$^m$. **Butuan y Talacogon** (Valle del Agusan, Mindanao). Temblor oscilatorio de intensidad III; duración 7 segundos.

29, 12$^h$ 18$^m$ 59$^s$.* **Baguio** (W de Luzón). Temblor de tierra de intensidad III.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# BULLETIN FOR APRIL, 1911.

# METEOROLOGICAL BULLETIN FOR APRIL, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The mean atmospheric pressure for this month is almost identical with that of April, 1910. But if we compare it with the normal for April we will find it to be lower. Thus the monthly mean for Manila differs from the normal by —0.76 millimeters. The days of highest pressures for the Philippines were the 20th and 21st. The lowest pressures were observed on the 10th or 11th in Mindanao and part of the Visayas, and on the 23d or 24th in part of the Visayas and in Luzon.

The mean monthly temperature of this month compared with that of the same month of last year is generally either identical or slightly lower, the greatest differences being those of Atimonan, Tuguegarao, and Aparri. The absolute maximum and minimum temperatures for Manila were 35.6° C. and 18° C., registered on the 17th and 1st, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR APRIL, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from April, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from April, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Surigao | 758.32 | + 0.08 | 760.01 | 20 | 757.10 | 10 | 26.6 | + 0.6 | 33.5 | 28 | 21.5 | 23 |
| Cebu | 58.16 | + .10 | 59.82 | 20 | 56.93 | 10 | 27.4 | + .3 | 33 | 26 | 21.8 | 23 |
| Iloilo | 58.28 | + .02 | 60.05 | 21 | 56.75 | 11 | 27.2 | — .2 | 34.9 | 9 | 22.7 | 29 |
| Ormoc | 58.39 | + .12 | 60.09 | 20 | 57.05 | 11 | 25.9 | — .1 | 32.4 | 12 | 20.7 | 17 |
| Tacloban | 58.79 | + .14 | 60.37 | 20 | 57.75 | 10 | 26.8 | 0 | 34.4 | 29 | 20.2 | 23 |
| Capiz | 58.59 | ---------- | 60.37 | 21 | 57.20 | 23 | 27.2 | ---------- | 34.9 | 25 | 22.4 | 26 |
| Calbayog | 58.49 | + .02 | 60.15 | 20 | 57.25 | 23 | 26.3 | + .2 | 33.5 | 30 | 20.3 | 22 |
| Legaspi | 58.59 | — .24 | 60.42 | 21 | 56.55 | 23 | 27.2 | + .1 | 35.5 | 29 | 20? | 22 |
| Atimonan | 58.76 | — .05 | 60.95 | 21 | 55.22 | 23 | 27 | — 1.1 | 33.3 | 26 | 21.9 | 15 |
| Paracale | 58.85 | ---------- | 61.19 | 21 | 55.84 | 23 | 27 | ---------- | 34.8 | 26 | 22.3 | 10 |
| Manila | 58.59 | + .01 | 60.85 | 21 | 55.74 | 23 | 27 | — .2 | 35.6 | 17 | 18 | 1 |
| San Isidro | 58.48 | — .06 | 60.75 | 21 | 56.21 | 23 | 26.9 | — .6 | 34.6 | 14, 15 | 19.1 | 1 |
| Dagupan | 58.24 | — .14 | 60.38 | 21 | 56.48 | 23 | 27.7 | — .5 | 37.6 | 13 | 20.9 | 3 |
| Bolinao | 58.22 | ---------- | 60.47 | 21 | 56.19 | 23 | 27.5 | ---------- | 35.9 | 21 | 21.1 | 1 |
| Baguio[1] | 636.33 | — .26 | 638.75 | 21 | 634.62 | 24 | 18.2 | — .2 | 26.2 | 13 | 12.8 | 2 |
| Vigan | 758.27 | — .23 | 760.61 | 21 | 755.95 | 23 | 27.7 | — .5 | 38 | 23 | 21.5 | 24 |
| Tuguegarao | 58.93 | — .09 | 61.74 | 21 | 56.29 | 24 | 26.3 | — 1.3 | 36.3 | 10 | 19 | 6 |
| Aparri | 59.35 | 0 | 62.18 | 21 | 56.33 | 24 | 25.5 | — 1.1 | ---------- | ---------- | 18.8 | 8 |

[1] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—The total amount of rainfall of this month as reported from our stations is generally less than in April, 1910, as far as Mindanao and the Visayas are concerned; but it is greater for Luzon. The monthly amount collected in the rain gauge of the Central Observatory was 106.8 millimeters which is 12.7 millimeters above that of April, 1910, and 74 millimeters above the normal of this month.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF APRIL, 1911.

| Station. | Total. | Departure from April, 1910. | Rainy days. | Departure from April, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from April, 1910. | Rainy days. | Departure from April, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *mm.* |  |  | *mm.* |  |  | *mm.* | *mm.* |  |  | *mm.* |  |
| Jolo | 183.9 | + 54.2? | 12 | +4 | 59.1 | 4 | Calapan | 251.7 | + 95.8 | 16 | +1 | 56.1 | 23 |
| Isabela, Basilan | 173.5 | + 67.8 | 14 | 0 | 59.7 | 15 | Virac | 180.8 | + 49.1 | 13 | —1 | 48.2 | 9 |
| Zamboanga | 34.9 | — 3.4 | 6 | +2 | 16.5 | 11 | Nueva Caceres | 169. | + 40.1 | 11 | 0 | 70.9 | 9 |
| Davao | 198.4 | —108.4 | 12 | +3 | 33 | 9 | Batangas | 162.4 | +113.4 | 7 | +3 | 85.9 | 23 |
| Cotabato | 274.3 | +125.1 | 18 | +5 | 55.6 | 14 | Atimonan | 283.5 | +199.4 | 14 | +8 | 85.6 | 22 |
| Dapitan | 97.7 | —115.5 | 16 | +8 | 31.3 | 3 | Paracale | 149.7? | -------- | 14 | ------ | 43.5 | 22 |
| Butuan | 64 | —120.8 | 14 | —9 | 22.1 | 3 | Santa Cruz, La Laguna | 80.4 | -------- | 11 | ------ | 29.4 | 23 |
| Dumaguete | 29.7? | -------- | 9 | ------ | 9.1 | 5 | Antipolo | 194.5 | -------- | 11 | ------ | 69.9 | 23 |
| Yap, W. Carolines | 168.4 | — 35.8 | 20 | —1 | 27.2 | 19 | Manila | 106.8 | + 12.7 | 9 | +3 | 40.6 | 23 |
| Tagbilaran | 51.8 | —120.3 | 11 | +2 | 12.5 | 5 | Iba | 146.8 | + 39.3 | 7 | +2 | 34.7 | 23 |
| Surigao | 128.4 | —254.6 | 15 | —5 | 27.5 | 14 | San Isidro | 98.5 | — 16.4 | 13 | +5 | 42.7 | 10 |
| Maasin | 180.3 | -------- | 7 | ------ | 54.1 | 5 | Tarlac | 116.1 | + 32.5 | 9 | +3 | 33 | 13 |
| Cebu | 41.9 | — 73.4 | 10 | 0 | 14.5 | 21 | Baler | 333.2 | -------- | 17 | ------ | 91.4 | 16 |
| Iloilo | 106.3 | + 78.1 | 13 | +4 | 28.2 | 10 | Dagupan | 186.6 | +154.3 | 10 | +6 | 65.3 | 24 |
| San Jose Buenavista | 61.6 | — 9.7 | 15 | +7 | 24.9 | 24 | Bolinao | 99.8 | -------- | 8 | ------ | 41.2 | 26 |
| Cuyo | 50.3 | -------- | 6 | ------ | 21.8 | 23 | Baguio | 246.4 | + 72.8 | 15 | +2 | 88.4 | 27 |
| Ormoc | 81.3 | — 18.7 | 12 | —3 | 20.9 | 2 | San Fernando, Union | 81.4 | + 76.1 | 4 | +1 | 31.2 | 27 |
| Tacloban | 186.4 | — 75 | 20 | +2 | 51.6 | 5 | Echagüe | 274.7 | +159.9 | 17 | +9 | 48 | 14 |
| Capiz | 153.6 | -------- | 14 | ------ | 35.8 | 24 | Candon | 64 | + 46.8 | 4 | +1 | 42.4 | 27 |
| Borongan | 436.1 | — 49 | 22 | —1 | 76.2 | 6 | Vigan | 105.3 | + 25.6 | 6 | +4 | 78.5 | 27 |
| Calbayog | 218.9 | +112.5 | 14 | —1 | 79.3 | 22 | Tuguegarao | 183.9 | — 33.3 | 12 | +4 | 38.9 | 10 |
| Masbate | 70.8 | — 50.5 | 7 | —2 | 58.2 | 22 | Laoag | 44.7 | + 34.3 | 5 | +1 | 20.3 | 27 |
| Legaspi | 387 | +168.7 | 17 | +2 | 104.1 | 9 | Aparri | 134.6 | + 75.3 | 14 | +7 | 26.6 | 26 |
| Sumay, Guam | 22.4 | — 53.4 | 5 | —9 | 8.9 | 3 | Sto. Domingo, Batanes Is. | 116.7 | + 2.7 | 12 | —3 | 52.3 | 17 |

## DEPRESSIONS AND TYPHOONS.

There was only one depression or small typhoon worth mentioning during the whole month of April. It formed apparently on the 21st over the Pacific to the east of Samar and at a distance of over 300 miles. At 2 p. m. of the 22d its center was approaching the northeastern coast of the said island having moved during the preceding day almost due west. On the 23d it moved approximately to NW by W, and hence it passed between Manila and Batangas. It would seem that on the evening or night of the 24th it filled up in the China Sea to the west of Luzon not far from 115° longitude E and 17° or 18° latitude N.

The following typhoon warnings were wired by Manila Observatory to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

April 23, 8 a. m.: Typhoon near or over southeastern Luzon, moving W or WNW.
April 23, 3.30 p. m.: Typhoon S of Manila, over or near southern Luzon, moving WNW.
April 24, 9.30 a. m.: Typhoon W of Manila, more than 100 miles distant, moving WNW or NW.
April 24, 5.30 p. m.: Typhoon W of Luzon, more than 100 miles distant, moving WNW or NW.

From Hongkong Observatory we received these cablegrams:

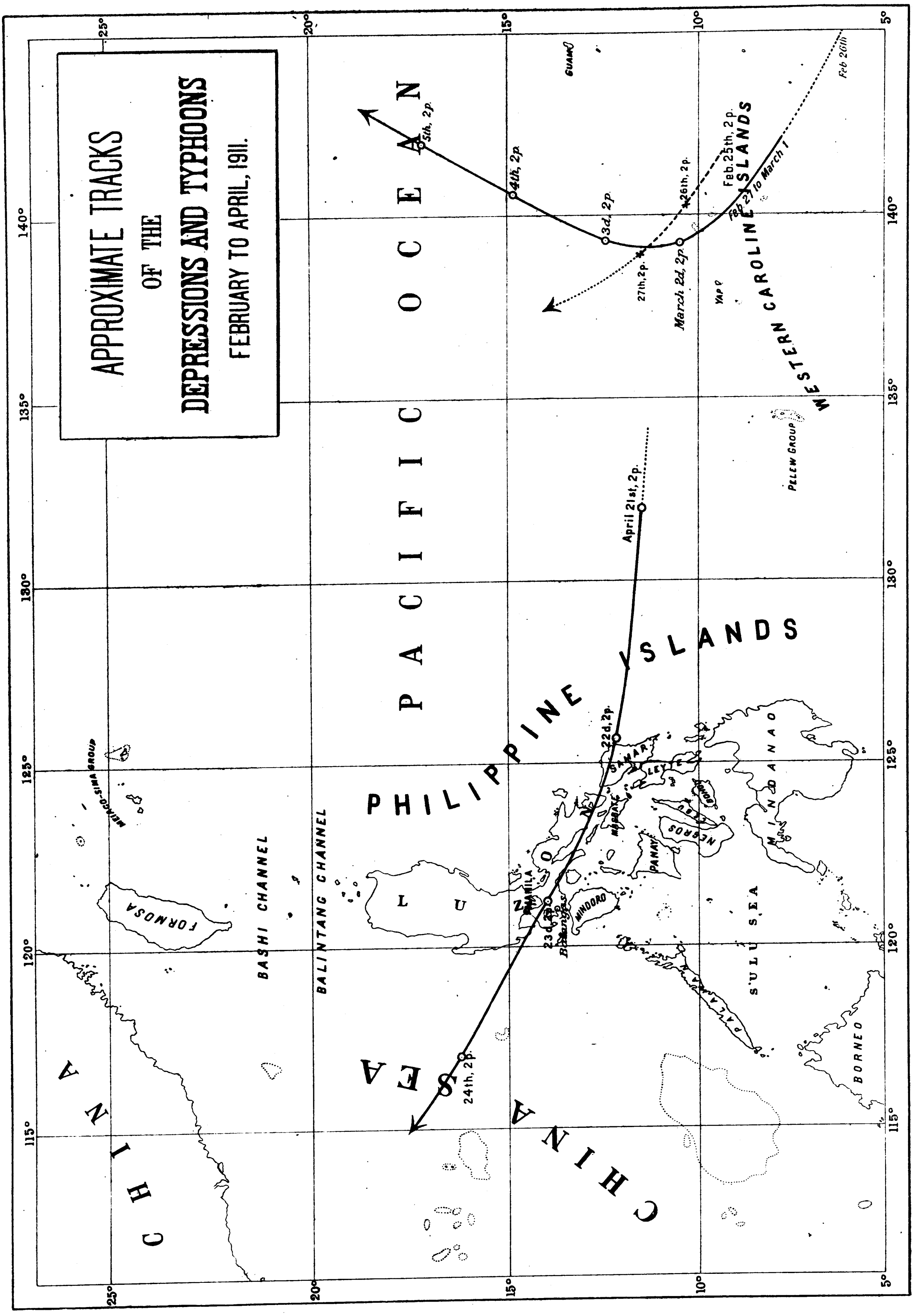
April 23, 6 p. m.: Typhoon in S Luzon moving WNW.
April 24, 10.30 a. m.: Typhoon W of Luzon, moving NW.

Zikawei Observatory sent the following warning to the stations along the China coast:

April 24, noon: Typhoon W of Luzon, moving NW.

In Plate I we publish the approximate track of this small typhoon. In the same plate we have included the tracks of the depressions and typhoons of February and March, of which we have spoken in the bulletins for these months.

*Plate I.*



APPROXIMATE TRACKS
OF THE
DEPRESSIONS AND TYPHOONS
FEBRUARY TO APRIL, 1911.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes apenas difiere de la de Abril del año próximo pasado. Sin embargo, si se compara con la normal de este mes, resulta inferior, según se ve por la de Manila que se separa de aquella en —0.76 mm. Los días de presiones mayores fueron en Filipinas el 20 y 21. Las menores presiones se observaron el 10 ú 11 en Mindanao y parte de las Visayas, y el 23 ó 24 en parte de Visayas y en Luzón.

La temperatura media mensual es generalmente ó idéntica á la del año pasado ó algo inferior, siendo las diferencias más notables las correspondientes á Atimonan, Tuguegarao y Aparri. Los valores extremos para Manila fueron 35.6°C y 18°C registrados los días 17 y 1 respectivamente.

**Precipitación acuosa.**—La cantidad total de agua recogida este mes en los pluviómetros de nuestras estaciones resulta generalmente menor que la de Abril de 1910 para Mindanao y Visayas, y mayor para Luzón. En Manila se recogieron 106.8 mm. de agua, cantidad superior á la del año pasado en 12.7 mm. y á la normal de Abril en 74.0 mm.

## DEPRESIONES Y TIFONES.

Sóla una depresión ó pequeño baguio merece este mes mención especial. Se formó probablemente el 21 en el Pacífico hacia el este de Sámar y á una distancia mayor de 300 millas. Á las 2 p. m. del 22 se hallaba cerca de la costa nordeste de Sámar habiéndose movido hasta entonces muy inclinado al Oeste. El 23 se dirigió próximamente al NW $\frac{1}{4}$ W viniendo así á pasar por entre Manila y Batangas. La tarde ó noche del 24 parece que hubo de deshacerse en el Mar de China al Oeste de Luzón no lejos de 115° longitud E y 17° ó 18° latitud N.

El Observatorio de Manila envió con motivo de esta depresión ó tifón los siguientes telegramas á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 23, 8 a. m.: Tifón en, ó cerca de, la parte sudeste de Luzón, moviéndose al W ó WNW.

Día 23, 3.30 p. m.: Tifón al Sur de Manila, en, ó cerca de, la parte Sur de Luzón, moviéndose al WNW.

Día 24, 9.30 a. m.: Tifón al Oeste de Manila, distancia mayor de 100 millas, moviéndose al WNW ó NW.

Día 24, 5.30 p. m.: Tifón al Oeste de Luzón, distancia mayor de 100 millas, moviéndose al WNW ó NW.

Del Observatorio de Hongkong recibimos á la vez estos telegramas:

Día 23, 6 p. m.: Tifón en el Sur de Luzón, moviéndose al WNW.

Día 24, 10.30 a. m.: Tifón al Oeste de Luzón, moviéndose al NW.

El Observatorio de Zikawei envió también este aviso de tifón á las estaciones de la Costa de China:

Día 24, 12 mediodía: Tifón al Oeste de Luzón, moviéndose al NW.

En la lámina I podrán ver nuestros lectores la trayectoria aproximada de este tifón. En la misma lámina hemos incluido por motivos de economía las pocas depresiones y tifones de Febrero y Marzo de este año, de las cuales hablamos ya en los boletines correspondientes de aquellos meses.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 758.80 | 25.9 | 34.2 | 18 | 26.2 | 27.2 | 27.3 | 27.6 | 27.6 | 27.7 | 66.2 | 15.9 | 7 | 5.5 |
| 2 | 59.16 | 26.2 | 34.3 | 19.8 | 26.3 | 27.7 | 27.4 | 27.6 | 27.5 | 27.7 | 63.3 | 15.6 | 6.3 | 4.9 |
| 3 | 59.49 | 25.5 | 33 | 18.7 | 26.3 | 27 | 27.2 | 27.3 | 27.5 | 27.4 | 71.7 | 17.2 | 4.9 | 3.9 |
| 4 | 59.65 | 26.7 | 33.3 | 23.1 | 26.8 | 27.9 | 27.3 | 27.5 | 27.5 | 27.7 | 74 | 18.9 | 5.5 | 4.1 |
| 5 | 59.21 | 26.4 | 33.1 | 20.9 | 26.9 | 28 | 27.5 | 27.7 | 27.4 | 27.7 | 68.3 | 17 | 5.8 | 4.4 |
| 6 | 59.42 | 26.1 | 34.2 | 19.8 | 26.5 | 27.9 | 27.4 | 27.7 | 27.5 | 27.7 | 64.7 | 15.7 | 7.8 | 5.9 |
| 7 | 58.98 | 25.8 | 32.9 | 19 | 26.3 | 27.7 | 27.4 | 27.7 | 27.5 | 27.7 | 68.6 | 16.5 | 6.3 | 4.7 |
| 8 | 58.44 | 26.6 | 34.2 | 20 | 26.3 | 27.5 | 27.4 | 27.8 | 27.6 | 27.7 | 69.8 | 17.7 | 6.5 | 4.9 |
| 9 | 57.44 | 27 | 33.7 | 22.5 | 27 | 27.8 | 27.8 | 27.7 | 27.5 | 27.7 | 77.2 | 20.3 | 4.8 | 3.5 |
| 10 | 57.16 | 28.7 | 35.3 | 23.3 | 27.2 | 28.9 | 27.9 | 28.2 | 27.5 | 27.7 | 70.2 | 19.9 | 7.3 | 5.5 |
| 11 | 57.09 | 28.5 | 34 | 23.3 | 27.8 | 29.1 | 28.1 | 28.5 | 27.6 | 27.8 | 75.7 | 21.6 | 5.3 | 3.8 |
| 12 | 57.87 | 29 | 35.4 | 24.6 | 28.2 | 29.8 | 28.6 | 29 | 27.5 | 27.8 | 71.1 | 20.6 | 6.6 | 4.9 |
| 13 | 58.71 | 27.9 | 34.3 | 22.5 | 28.4 | 29.7 | 28.9 | 29.1 | 27.5 | 27.8 | 68.5 | 18.7 | 7 | 5.2 |
| 14 | 58.14 | 28.1 | 34.5 | 22 | 28.1 | 29.8 | 28.9 | 29.4 | 27.6 | 27.8 | 71 | 19.6 | 5.4 | 4.6 |
| 15 | 57.88 | 27.5 | 33.2 | 23 | 28.2 | 30.3 | 28.9 | 29.4 | 27.7 | 27.8 | 75.6 | 20.4 | 5.9 | 3.8 |
| 16 | 58.11 | 27.8 | 34.2 | 23 | 28.5 | 30.2 | 29 | 29.5 | 27.7 | 27.9 | 75.4 | 20.6 | 5.8 | 4.7 |
| 17 | 58.39 | 28.4 | 35.6 | 24 | 28.7 | 30.4 | 29.2 | 29.8 | 27.8 | 27.8 | 73 | 20.6 | 5.7 | 4.3 |
| 18 | 58.46 | 27.8 | 33.8 | 22.9 | 28.9 | 30.6 | 29.3 | 29.7 | 27.8 | 27.9 | 73.7 | 20 | 5.7 | 4.4 |
| 19 | 59.35 | 27.7 | 33.1 | 23.6 | 28.7 | 30.2 | 29.3 | 29.7 | 27.8 | 27.9 | 75.5 | 20.5 | 4.5 | 3.5 |
| 20 | 60.31 | 27.1 | 32.9 | 24.6 | 28.7 | 29.5 | 29.3 | 29.4 | 27.9 | 27.9 | 80.6 | 21.3 | 3.1 | 2.5 |
| 21 | 60.85 | 27.6 | 33.1 | 22.9 | 28.7 | 29.6 | 29.3 | 29.4 | 27.9 | 27.9 | 69.9 | 18.8 | 5.6 | 4.1 |
| 22 | 59.48 | 26.7 | 33.2 | 23.6 | 28 | 29.1 | 29 | 29 | 27.9 | 27.8 | 76.6 | 19.9 | 2.7 | 2.7 |
| 23 | 55.74 | 24.2 | 26.2 | 22 | 27.9 | 27.3 | 28.8 | 28.5 | 27.9 | 27.8 | 90.8 | 20.4 | .1 | .9 |
| 24 | 57.81 | 25.7 | 30.3 | 23 | 27 | 28.3 | 28.3 | 28.2 | 28 | 27.9 | 85.2 | 20.8 | 2.6 | 2.2 |
| 25 | 59.11 | 26.8 | 31.4 | 22.2 | 27.7 | 28.9 | 28.3 | 28.5 | 28 | 27.9 | 81.2 | 21.2 | 3.6 | 2.5 |
| 26 | 59.38 | 27 | 31.2 | 24.3 | 28.3 | 29.6 | 28.6 | 28.7 | 28.1 | 28 | 83.2 | 22 | 1.9 | 2.4 |
| 27 | 58.30 | 26.5 | 31.9 | 24.4 | 28.3 | 29.9 | 28.7 | 29 | 28 | 28 | 85.1 | 21.8 | 1.5 | 2.3 |
| 28 | 57.82 | 26.8 | 31.4 | 23.7 | 27.8 | 29.3 | 28.7 | 28.8 | 28 | 28 | 82.9 | 21.6 | 3.4 | 2.4 |
| 29 | 58.26 | 27.5 | 32.7 | 24 | 28.6 | 30.2 | 28.8 | 29 | 28.1 | 28 | 80.9 | 21.9 | 3.4 | 2.6 |
| 30 | 58.90 | 27.1 | 32.6 | 24 | 28.8 | 30.2 | 28.9 | 28.9 | 28.1 | 28 | 82.2 | 21.9 | 3.4 | 2.5 |
| Mean | 758.59 | 27 | 33.1 | 22.4 | 27.7 | 29 | 28.4 | 28.6 | 27.7 | 27.8 | 75.1 | 19.6 | 4.8 | 3.8 |
| Total | | | | | | | | | | | | | 145.4 | 113.6 |
| Departure from normal | —0.76 | —1.2 | —0.7 | —0.4 | | | | | | | +5.2 | +0.1 | | |

| Date. | Wind. | | | | Clouds. | | | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | | | |
| | | | | | | Upper. | | Lower. | | | | | |
| | | *Km.* | *Km.* | | *0–10.* | | | | | *h.* | *m.* | *mm.* | |
| 1 | E quad. | 186.5 | 20.5 | ESE | 3.8 | Ci. | | Cu. | E | 10 | 00 | | |
| 2 | E quad. | 131 | 14.5 | SW | 4.5 | Ci.-S. | | Cu. | E | 10 | 25 | | |
| 3 | N quad. | 146.5 | 20 | NNE | 7.9 | Ci. | | S.-Cu. | ENE | 6 | 00 | | |
| 4 | E quad. | 180.5 | 19.5 | ESE | 7.2 | A.-Cu. | NE | Cu. | E | 5 | 50 | 0.6 | d a. |
| 5 | E quad. | 120 | 16.5 | WSW | 5.8 | Ci. | | Cu. | E | 7 | 00 | | |
| 6 | E quad. | 184 | 19 | E | 2.9 | Ci. | | Cu. | E | 9 | 25 | | |
| 7 | E quad. | 185 | 20 | WbyN | 3.7 | Ci. | | Cu. | E | 10 | 10 | | Ω a. |
| 8 | SE quad. | 141 | 16 | SEbyE | 3.6 | A.-Cu. | ESE | Cu. | E | 9 | 45 | | ☈° d° p. |
| 9 | W quad. | 156 | 18 | NE | 6.2 | A.-Cu. | | Cu. | E | 7 | 50 | | ϟ p. |
| 10 | SE | 195 | 20 | SE | 3.6 | Ci.-Cu. | | Cu. | ESE | 10 | 20 | | |
| 11 | W quad. | 181.5 | 18 | NW | 4 | Ci.-S. | NNW | Cu. | SEbyE | 9 | 45 | | ☈° p. |
| 12 | SE | 138 | 15.5 | SE | 4.6 | Ci.-S. | | Cu. | ESE | 8 | 20 | | |
| 13 | E quad. | 211 | 23 | SE | 3.8 | Ci. | | Cu. | E | 10 | 30 | | |
| 14 | S quad. | 172 | 20 | NW | 3.8 | Ci. | | Cu. | ENE | 10 | 25 | 2.1 | ● p. |
| 15 | SW quad. | 237 | 22 | SWbyW | 3 | Ci.-Cu. | | Cu. | | 10 | 25 | | |
| 16 | SW quad. | 161 | 17.5 | WSW | 2.8 | Ci.-S. | | Cu. | SE | 10 | 00 | | |
| 17 | SW quad. | 190.5 | 24 | SW | 4.2 | Ci.-S. | | Cu. | E | 8 | 55 | | |
| 18 | SW quad. | 193.5 | 17 | SW | 3.8 | Ci. | | Cu. | EbyS | 8 | 25 | | ∞ p. |
| 19 | SW quad. | 183 | 18.5 | SW | 6.9 | Ci.-S. | E | Cu. | | 4 | 55 | 10.9 | ∞$^2$ ● p. |
| 20 | E quad. | 95 | 11 | W | 9.4 | Ci.-S. | S | Cu.-N. | E | 2 | 15 | | |
| 21 | NE quad. | 177 | 21.5 | NE | 7.2 | Ci.-S. | | N.-cf. | ENE | 5 | 15 | | |
| 22 | N quad. | 173 | 17.5 | NNE | 8.9 | Ci.-S. | | Cu. | NE | 1 | 05 | .1 | ●° p. |
| 23 | N quad. | 522 | 39 | NNW | 10 | | | N. | NE quad. | 0 | 00 | 40.6 | ↙° p. ● a. p. |
| 24 | S quad. | 305 | 31 | W | 7.6 | A.-Cu. | SW | Cu. | SW | 8 | 20 | 13.9 | ● a. ●° ○ p. |
| 25 | WSW | 202.5 | 26 | WSW | 5.9 | Ci. | N | Cu.-N. | SSW | 8 | 05 | | Ω° a. ☈ ∩ p. |
| 26 | WSW | 317.5 | 36 | WSW | 8 | A.-Cu. | SWbyW | Cu. | SW | 8 | 05 | | d° ☈ a. ○° p° p. |
| 27 | SW quad. | 301 | 33.5 | SW | 8.9 | A.-Cu. | SW | Cu.-N. | SSW | 5 | 25 | 19.7 | ● a. p. |
| 28 | SW quad. | 336.5 | 23.5 | NW | 7.3 | Ci.-S. | NW | Cu. | W | 6 | 25 | 9.7 | ● a. d° ☈° p. |
| 29 | SW quad. | 221 | 24 | SSW | 7.6 | Ci. | | Cu. | NE | 6 | 50 | | |
| 30 | S quad. | 122 | 13 | ENE | 7.1 | A.-Cu. | | Cu. | SSE | 7 | 35 | 9.2 | ● a. ☈ p. |
| Mean | | 202.2 | 21.2 | | 5.8 | | | | | 7 | 36 | | |
| Total | | | | | | | | | | 227 | 45 | 106.8 | |
| Departure from normal | | —23.8 | | | + 1.8 | | | | | —36 | 23 | +74.0 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | | | mm. | |
| 1 | 757.24 | 26 | 29.3 | 23.3 | 89.7 | NW | 0.8 | 6 | Ci.-S. | SW | Cu. | NE | ------ | Ω$^2$ ⊤ a. ●∞ Ω$^2$ p. |
| 2 | 58.06 | 25.9 | 30.1 | 23.6 | 89 | E quad. | .7 | 7 | A.-Cu. | S | Cu.-N. | E | 6 | Ω$^2$ a. p. ●° a. |
| 3 | 58.51 | 26.9 | 30.8 | 23.5 | 84.7 | ENE | 1 | 4.8 | Ci. | NE | Cu.-N. | E | ------ | ●° a. ∞ Ω$^2$ p. |
| 4 | 58.60 | 26.1 | 30 | 23.3 | 88.2 | NE | 1 | 7.2 | Ci.-S. | | N.-cf. | NE | 3.1 | Ω$^2$ ●° a. d° Ω$^2$ p. |
| 5 | 58.13 | 25.7 | 28.9 | 23.9 | 88.3 | NE quad. | 1.3 | 8.5 | ------ | | Cu. | NE | 4.8 | Ω° d a. |
| 6 | 58.12 | 25.2 | 27.2 | 23.6 | 90.5 | N quad. | 1.3 | 9.2 | Ci.-S. | | Cu.-N. | NE | 17.3 | ●° a. Ω ϟ p. |
| 7 | 57.55 | 25.8 | 28.7 | 23.5 | 93 | NW quad. | .8 | 7.3 | Ci.-S. | | Cu.-N. | | ------ | ● a. Ω$^2$ p. |
| 8 | 57.54 | 27.2 | 31.1 | 22.7 | 85 | ENE | .5 | 3.8 | Ci. | | Cu. | SE | 4.5 | Ω$^2$ a. p. ∞ p. |
| 9 | 57.21 | 26.8 | 30.8 | 24 | 89 | ENE | .5 | 6.5 | ------ | | Cu.-N. | E | 11.7 | ●° d. a. ● p. |
| 10 | 57.10 | 27 | 30.8 | 24.2 | 88 | E quad. | .8 | 6.3 | ------ | | Cu.-N. | E | 1.8 | ●° a. p. ∞ p. |
| 11 | 57.18 | 27.3 | 31 | 23.4 | 86.8 | ENE | .5 | 4.3 | ------ | | Cu. | E | ------ | Ω$^2$ a. p. ∞ p. |
| 12 | 57.94 | 27.3 | 31.5 | 24.1 | 85 | NE quad. | 1.2 | 3.7 | ------ | | Cu. | | 6.6 | Ω$^2$ a. ∞ p. |
| 13 | 58.32 | 27.1 | 31.4 | 23.8 | 86.5 | NE | 1 | 7 | ------ | | N.-cf. | NE | 3 | Ω$^2$a. |
| 14 | 58.06 | 25.8 | 28 | 23.2 | 89.8 | NE | 1.5 | 8 | A.-Cu. | | Cu.-N. | NE | 27.5 | ● a. Ω$^2$ p. |
| 15 | 57.71 | 26.6 | 31.1 | 22.6 | 87.5 | Variable | .8 | 3 | Ci. | | Cu.-N. | SE, E | ------ | Ω$^2$ a. ∞ p. |
| 16 | 58.36 | 26.9 | 31.5 | 23 | 84.3 | Variable | .5 | 2.5 | Ci.-S. | | Cu. | E | ------ | Ω$^2$ a. p. ∞ p. |
| 17 | 58.43 | 26.7 | 31.6 | 22.3 | 84.5 | Variable | .5 | 6 | Ci.-S. | NE | Cu. | E | ------ | Ω$^2$ a. p. |
| 18 | 58.56 | 27 | 31.3 | 22.4 | 84.7 | Variable | .5 | 7.2 | Ci.-S. | NE | Cu. | E | ------ | Ω$^2$ a. ∞° p. |
| 19 | 59.34 | 26.9 | 30.6 | 23.4 | 86.2 | Variable | .5 | 8.5 | Ci.-S | NE | Cu. | E | ------ | ∞ Ω° p. |
| 20 | 60.01 | 25.9 | 28.4 | 24 | 91.5 | NW | .2 | 10 | Ci.-S. | | Cu.-N. | ENE | 19.8 | Ω° a. ●° p. |
| 21 | 59.74 | 24.5 | 27.4 | 22.3 | 93 | SbyW, WSW | .3 | 10 | ------ | | Fr.-N. | NNW | 19.3 | d ● a. d p. |
| 22 | 58.07 | 25.4 | 29.5 | 22.1 | 84.5 | W quad. | 1.3 | 8.5 | Ci.-S. | | Fr.-N. | N, NW | ------ | d° ● a. d ϟ° p. |
| 23 | 57.81 | 26.6 | 31 | 21.5 | 83.5 | E quad. | .3 | 4 | Ci.-S. | NE | Cu. | S | ------ | Ω$^2$ a. ∞ Ω° p. |
| 24 | 58.72 | 26.9 | 31.1 | 22.8 | 85.5 | Variable | .5 | 2.8 | A.-Cu. | SE | Cu. | S | ------ | Ω$^2$ a. ∞ ϟ p. |
| 25 | 59.80 | 27.1 | 31.2 | 23.1 | 86.7 | NW | .7 | 3.5 | A.-Cu. | SE | Cu. | SW | ------ | Ω° a. ∞ ϟ p. |
| 26 | 59.86 | 27.3 | 31.9 | 23.1 | 84.3 | W quad. | .7 | 2.3 | ------ | | Cu. | SW | ------ | Ω$^2$ a ϟ p. |
| 27 | 58.98 | 27.4 | 31.8 | 22.9 | 83.2 | W quad. | .5 | 3.2 | A.-Cu. | | Cu.-N. | | ------ | ϟ Ω° a. ∞ ϟ$^2$ p. |
| 28 | 58.07 | 28 | 33.5 | 23.2 | 78.8 | W, SSW | .3 | 2.8 | Ci., Ci.-S. | | Cu. | SW | 3 | Ω$^2$ a. p. ∞ p. |
| 29 | 58.09 | 27.9 | 32.6 | 23.5 | 81.2 | W quad. | .7 | 5.7 | Ci.-S. | NE | Cu.-N. | | ------ | ⊤ a. ∞ ϟ$^2$ p. |
| 30 | 58.46 | 27.3 | 31.1 | 23.7 | 83.8 | WbyN | .3 | 7 | Ci.-S. | NE | Cu.-N. | SW | ------ | ⊤ Ω° a. ⌈ϟ ϟ p. |
| Mean | 758.32 | 26.6 | 30.5 | 23.2 | 86.6 | ------ | .7 | 5.9 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 128.4 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | | | mm. | |
| 1 | 757.06 | 27.2 | 31.6 | 23.4 | 74.3 | ENE, SSW | 5.8 | 4.8 | A.-Cu. | E | Cu., Cu.-N. | NE | ------ | ≡° d ⌈ϟ° a. |
| 2 | 57.64 | 26.7 | 30 | 23.4 | 77.3 | NE quad. | 12.5 | 4 | Ci. | | Cu., Cu.-N. | ENE | ------ | Ω ≡° a. ⌈ϟ° p. |
| 3 | 58.54 | 27.2 | 30 | 24.8 | 76.3 | NE quad. | 9.9 | 5.8 | Ci. | | Cu. | E | ------ | Ω a. ϟ p. |
| 4 | 58.61 | 27.1 | 30.7 | 24.7 | 74.5 | NE quad. | 10.9 | 4.7 | Ci.-S. | | Cu. | ENE | ------ | Ω ○ a. ∞ p. |
| 5 | 57.98 | 26.7 | 31.6 | 23.6 | 76 | NE quad. | 11.8 | 4.8 | A.-Cu. | E | Cu. | NE | 1.8 | Ω a. ●° ω ϟ p. |
| 6 | 57.97 | 27 | 32.5 | 23.1 | 74.3 | NE quad. | 11.9 | 6 | Ci.-S. | | Cu. | NE | ------ | Ω a. |
| 7 | 57.38 | 27.8 | 31.5 | 24.6 | 74 | NE quad. | 13.6 | 4.5 | Ci.-S. | | Cu. | NE | ------ | Ω a. ϟ Φ p. |
| 8 | 57.40 | 27.8 | 31.5 | 24.4 | 72.3 | NE quad. | 9 | 2.7 | Ci. | | Cu. | ENE | ------ | Ω a. ϟ p. |
| 9 | 56.94 | 27.7 | 31.5 | 24 | 75.2 | ENE | 10 | 4 | Ci. | | Cu. | ENE | 2.5 | ≡° Ω a. ⌈ϟ° p. |
| 10 | 56.93 | 27.9 | 31 | 24.9 | 74.2 | NE quad. | ------ | 4.5 | Ci. | | Cu., Cu.-N. | ENE | ------ | Ω ●° a. ⌈ϟ° p. |
| 11 | 56.95 | 28.1 | 31.8 | 25.5 | 71.5 | NE quad. | 9.1 | 4.7 | Ci. | | Cu., S.-Cu. | ENE | 7.1 | Ω a. ● ⌈ϟ° p. |
| 12 | 57.71 | 28 | 31.7 | 24.7 | 73 | NE quad. | 9.8 | 2.5 | Ci. | | Cu. | ENE | ------ | Ω a. |
| 13 | 58.19 | 28 | 31.6 | 24.3 | 69.8 | NE quad. | 11 | 2.5 | Ci. | | Cu. | ENE | ------ | ≡° Ω a. |
| 14 | 57.88 | 28 | 31.1 | 26 | 71.5 | NE, ENE | 8.8 | 3.7 | Ci. | | Cu., S.-Cu. | ENE | ------ | Ω a. |
| 15 | 57.51 | 27.3 | 31.5 | 24.5 | 72.7 | SE | 6 | 3.8 | Ci., Ci.-S. | | Cu. | NE quad. | .5 | Ω a. d ⌈ϟ p. |
| 16 | 58.07 | 26.8 | 32.5 | 23.3 | 76 | Variable | 6.1 | 3.8 | Ci., Ci.-S. | | Cu. | NE | ------ | ≡° a. ⌈ϟ° p. |
| 17 | 58.30 | 27.6 | 32 | 23.7 | 72.8 | E, SSE | 6 | 3.8 | Ci., Ci.-S. | | Cu. | ENE | ------ | ≡° Ω a. ⌈ϟ° p. |
| 18 | 58.40 | 27.1 | 31 | 23.9 | 75.5 | Variable | 5.8 | 4.2 | Ci., Ci.-S. | | Cu. | ENE | ------ | ≡° Ω a. ⌈ϟ p. |
| 19 | 59.03 | 26.7 | 31 | 22.9 | 78.2 | S | 4.6 | 7.2 | Ci.-S. | | Cu.-N. | NNE | 13.2 | ≡° Ω ◠ a. ● ⌈ϟ p. |
| 20 | 59.82 | 27 | 30.8 | 23.8 | 77 | Variable | 7.2 | 6.7 | Ci.-S. | | Cu.-N. | NE | ------ | ≡° Ω a. ⌈ϟ° a. p. |
| 21 | 59.80 | 26.9 | 30 | 24.5 | 77 | NE, NW | 4.7 | 7.8 | Ci. | | Cu.-N., N. | NE | 14.5 | Ω ⌈ϟ d a. ϟ p. |
| 22 | 58.06 | 25.8 | 29 | 22.5 | 79.5 | N | 6.4 | 9 | Ci.-S. | | Cu.-N. | NE | ------ | ≡° ● ⌈ϟ a. |
| 23 | 57.42 | 26.4 | 30.4 | 21.8 | 78.7 | SW | 7.5 | 5 | Ci.-S. | | Cu. | SW | 1.5 | Ω ⌈ϟ° a. ϟ p. |
| 24 | 58.58 | 27.9 | 31.5 | 24.6 | 74.8 | SW | 7.5 | 3 | Ci. | | Cu. | S | ------ | Ω ●° a. ⌈ϟ° p. |
| 25 | 59.65 | 27.6 | 32.7 | 23.6 | 73.3 | S quad. | ------ | 4.5 | Ci.-S. | | Cu. | S | ------ | Ω ⊕ a. ⌈ϟ° a. p. |
| 26 | 59.70 | 27.9 | 33 | 24.5 | 74 | SW, S | 6.4 | 3.5 | Ci., Ci.-S. | | Cu. | SSW | ------ | Ω a. ⌈ϟ° p. |
| 27 | 58.85 | 27.6 | 31.5 | 23.3 | 74.5 | SW quad. | 7.2 | 3.2 | Ci. | | Cu. | SW | ------ | Ω a. ⌈ϟ° p. |
| 28 | 57.96 | 28 | 32 | 24.6 | 71.7 | SW, SSW | 8.9 | 3.2 | Ci. | | Cu. | SW | ------ | Ω a. ⌈ϟ° p. |
| 29 | 58.09 | 27.8 | 31.5 | 23.9 | 73.5 | S | 5.7 | 4.3 | Ci. | | Cu. | W | ------ | Ω ◠ a. ⌈ϟ° p. |
| 30 | 58.42 | 27 | 31.3 | 24.6 | 79.8 | S, NW | 4.9 | 6.7 | Ci. S | | Cu.-N. | W | .8 | ϟ ⌈ϟ a. p. d p. |
| Mean | 758.16 | 27.4 | 31.3 | 24 | 74.8 | ------ | 8.2 | 4.6 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 41.9 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi=10°\ 42'$ N; $\lambda=122°\ 34'$ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 757.53 | 26.5 | 31.9 | 24 | 78 | N | 13 | 5.2 | Ci. | Cu. NNE | 2.3 | d a. ● p. |
| 2 | 58.04 | 26.6 | 31.1 | 23.4 | 77.5 | N | 14.8 | 6.5 | Ci. S | Cu. NE | ------ | Ω d a. |
| 3 | 58.58 | 26.8 | 31.9 | 23.7 | 78.7 | N | 12.9 | 7.3 | Ci. | Cu. ENE, NE | ------ | ϟ d p. |
| 4 | 58.59 | 27.4 | 32.3 | 23.8 | 70.7 | NE quad. | 14.6 | 3.5 | Ci.-S. | Cu. | ------ | Ω ○ a. |
| 5 | 58.25 | 27 | 31.9 | 23.9 | 74 | NE quad. | 16.4 | 4.2 | Ci. | Cu. NNE | 1 | Ω° a. d a. p. |
| 6 | 58.17 | 26.9 | 31.7 | 23.4 | 73.2 | NE quad. | 18.1 | 3.5 | Ci. | Cu. NE | ------ | ● a. |
| 7 | 57.57 | 27.1 | 32.4 | 23.2 | 72.2 | NNE | 16.4 | 4.2 | Ci., A.-Cu. | Cu. NE | 2.3 | Ω° a. ϟ p. |
| 8 | 57.27 | 27.8 | 33.1 | 24 | 77.3 | N | 14 | 5.2 | Ci. | Cu. | ------ | ● a. d° p. |
| 9 | 56.88 | 28.1 | 34.9 | 24.2 | 75.5 | N, E | 9 | 4.8 | Ci. | Cu. | 11.2 | Ω° a. ϟ ⌈ϟ ● p. |
| 10 | 56.90 | 28.1 | 32.7 | 23.8 | 76.7 | NE quad. | 10.2 | 5 | Ci. | Cu. | 28.2 | ⊤ ϟ ⌈ϟ ● p. |
| 11 | 56.75 | 28.1 | 33.9 | 24.2 | 75 | NE quad. | 6.9 | 3.7 | Ci. | Cu. | ------ | ϟ a. p. |
| 12 | 57.63 | 28.1 | 33.7 | 24.7 | 73.5 | E | 8.8 | 3.8 | A.-Cu. ENE | Cu. | ------ | ∞ p. |
| 13 | 58.10 | 28.3 | 33.4 | 24.6 | 64.5 | NE quad. | 14.7 | 2.3 | Ci. | Cu. | ------ | ∞ p. |
| 14 | 57.64 | 28.1 | 33.5 | 24.1 | 67.8 | NE quad. | 14.8 | 3.3 | A.-Cu. E | Cu. NNE | ------ | Ω° a. ∞ p. |
| 15 | 57.64 | 27.1 | 34 | 23.9 | 76 | Variable | 7.1 | 6.2 | Ci. | Cu.-N. E | ------ | ⊤ d² ϟ p. |
| 16 | 58.23 | 27.1 | 33.7 | 23 | 76.3 | NE quad. | 7.2 | 5.3 | Ci. | Cu. NE | 25.9 | ≡° a. ⌈ϟ ● p. |
| 17 | 58.44 | 27.1 | 33.5 | 23.3 | 77.8 | E, SW | 7.5 | 8.2 | Ci. | Cu. | ------ | ≡° a. ϟ d p. |
| 18 | 58.45 | 26.7 | 32.8 | 23.8 | 78.7 | NW | 7.8 | 6.2 | Ci.-S. | Cu. NNW | 1 | ○ a. ⊤ ⌈ϟ ● ϟ p. |
| 19 | 59.39 | 26.4 | 32.1 | 23.5 | 82.5 | Variable | 5 | 8.2 | Ci.-S. | Cu. N | 6.4 | ≡ a. ⌈ϟ ● ⊤ p. |
| 20 | 59.96 | 27.6 | 32 | 24.2 | 75.7 | NE quad. | 8.3 | 8.3 | A.-Cu. ESE | Cu. NE | 1.8 | ⊤ ϟ p. |
| 21 | 60.05 | 25.7 | 30.1 | 23.9 | 84.8 | N | 8.5 | 9.5 | Ci.-S. | Cu.-N. | 4.8 | ● a. p. |
| 22 | 58.64 | 25.7 | 29.8 | 23.2 | 83 | N | 8.4 | 9.8 | Ci.-S. | Cu. | ------ | d a. p. |
| 23 | 57.12 | 26.5 | 29.8 | 23.4 | 76.5 | SW | 14.2 | 5 | Ci. NE | Cu. | 2.8 | ○ a. d ● p. |
| 24 | 58.67 | 27 | 29.6 | 24.4 | 82.3 | SW | 12.5 | 2.7 | Ci. E | Cu. | 2.3 | ≡ a. ● a. p. |
| 25 | 59.82 | 27.5 | 30.5 | 23.9 | 81.5 | SW | 12.9 | 5.3 | Ci. E | Cu. | 11.2 | ● a. ϟ p. |
| 26 | 59.87 | 27.2 | 30.2 | 23.8 | 81.7 | SW | 10 | 5.5 | Ci., Ci.-S. | Cu. | ------ | Ω a. ϟ p. |
| 27 | 59.05 | 27.7 | 30.2 | 25.2 | 78.8 | SW | 13.3 | 3.8 | Ci. | Cu.-N. SW | ------ | ϟ p. |
| 28 | 58.16 | 28.2 | 30.7 | 26 | 75 | SW | 16.3 | 3.5 | Ci. | Cu. SW | ------ | ϟ p. |
| 29 | 58.28 | 26.5 | 30.6 | 22.7 | 79.7 | SW, NE | 8.6 | 2.2 | Ci. | Cu. | ------ | Ω° a. ⊤ ϟ p. |
| 30 | 58.69 | 26.2 | 31.8 | 23.8 | 82.2 | Variable | 5.3 | 4.3 | Ci., Ci.-S. | Cu. | 5.1 | Ω a. ⌈ϟ ● ϟ p. |
| Mean | 758.28 | 27.2 | 32 | 23.9 | 76.9 | ------------ | 11.2 | 5.2 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 106.3 | |

### ORMOC.

[$\phi=11°\ 00'$ N; $\lambda=124°\ 36'$ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Clouds. Amount (mean). | Upper. | Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 757.50 | 24.9 | 29.4 | 22 | 89.5 | N, W | 5.1 | 8.2 | Ci.-S. | Cu.-N. E, ENE | 15.8 | ≡° a. ● a. p. ⊤ p. |
| 2 | 58.16 | 24.2 | 28.6 | 21.4 | 91.8 | N | 4.5 | 6.2 | Ci. | Cu. EbyN | 20.9 | ● ⊤ a. p. ϟ p. |
| 3 | 58.83 | 25.4 | 29 | 22 | 88 | Variable | 4.8 | 5.8 | Ci. | Cu.-N. E | 4.3 | d ϟ p. |
| 4 | 58.79 | 25.8 | 30 | 22.2 | 84.2 | N quad. | 5.7 | 6.3 | Ci. | Cu.-N. E | -------- | ϟ p. |
| 5 | 58.38 | 25.4 | 29.4 | 22.4 | 88 | N quad. | 4.8 | 7.8 | Ci.-S. | Cu.-N. ENE | 6.9 | d a. ⌒ ϟ p. |
| 6 | 58.31 | 25.8 | 30 | 23.1 | 83.5 | NE quad. | 5.4 | 8.8 | Ci.-S. | Cu.-N. NE | 1.1 | ≡° d a. |
| 7 | 57.71 | 26 | 31 | 23.7 | 89.8 | N quad. | 5 | 8.5 | Ci.-S. | Cu.-N. NE | 3 | ≡° a. ⌈ϟ ⌒ ϟ p. d |
| 8 | 57.56 | 25.7 | 30.5 | 22.7 | 87 | N | 5 | 5 | Ci. | Cu., Cu.-N. E | -------- | ⊤ p. |
| 9 | 57.19 | 25.8 | 31 | 22 | 87.5 | N quad. | 5.4 | 7.3 | A.-Cu., Ci.-S. | Cu. EbyS | -------- | ⌈ϟ ϟ ⏝ p. |
| 10 | 57.14 | 25.6 | 30.5 | 22.1 | 84.8 | NE quad. | 6.2 | 5 | Ci. | Cu. E | 9.4 | d a. ϟ p. |
| 11 | 57.05 | 26.3 | 31.4 | 20.9 | 81.7 | NE quad. | 7.6 | 4.2 | Ci.-S. | Cu. | -------- | ⊤ ϟ ⊕° p. |
| 12 | 57.80 | 26.6 | 32.4 | 21.4 | 79.3 | NE quad. | 7 | 3 | Ci. | Cu. ENE | -------- | |
| 13 | 58.38 | 26.8 | 31.5 | 22.1 | 75.2 | N quad. | 7.3 | 2.3 | Ci. | Cu. E | -------- | ≡° a. |
| 14 | 58.02 | 25.4 | 30.9 | 21.4 | 87.5 | N quad. | 6.8 | 4 | Ci. | Cu.-N. E | -------- | Ω° a. ⌈ϟ p. |
| 15 | 57.74 | 25.8 | 30.8 | 21 | 84.3 | NW quad. | 5.4 | 4.3 | Ci. | Cu.-N. NW | -------- | Ω° a. p p. |
| 16 | 58.17 | 26.4 | 31 | 21 | 79.5 | Variable | 6.7 | 3.5 | Ci. | Cu. N | -------- | Ω° a. ϟ p. |
| 17 | 58.39 | 26 | 31 | 20.7 | 81.3 | N | 6.2 | 7 | Ci. S | Cu.-N. | -------- | Ω° a. ϟ p. |
| 18 | 58.54 | 26.2 | 30.3 | 22.3 | 84.5 | N, S | 5.3 | 6.3 | A.-Cu. N | Cu.-N. | -------- | ⌈ϟ ϟ p. |
| 19 | 59.26 | 25.5 | 30 | 22 | 88.3 | N quad. | 4.6 | 8 | Ci.-S. E | Cu.-N. N | 3.1 | ⌈ϟ d ϟ p. |
| 20 | 60.09 | 25.4 | 29.4 | 21.5 | 88.2 | N | 4.2 | 8.2 | Ci.-S., A.-Cu. | Cu.-N. E | 1.5 | Ω° a. d ⊤° ϟ p. |
| 21 | 59.85 | 25.8 | 30.4 | 23.1 | 88 | N | 4 | 9.2 | Ci.-S. | Cu.-N. NEbyE | 2.3 | d p. |
| 22 | 58.38 | 22.8 | 25 | 21 | 94.7 | N quad. | 5.3 | 9.5 | Ci.-S. | N. | 8.9 | ≡ a. d a. p. |
| 23 | 57.68 | 25.7 | 29.9 | 21.1 | 82.7 | E quad. | 9.5 | 6.7 | ci., ci.-s. NEbyN | Cu., cu.-N. swbys | -------- | ϟ p. |
| 24 | 58.75 | 27.3 | 31.2 | 23 | 80.8 | E quad. | 6.5 | 3.8 | Ci.-S. E | Cu. | -------- | ϟ p. |
| 25 | 59.80 | 26.8 | 30.8 | 23.3 | 82.5 | N | 6.2 | 6.3 | Ci.-S. E | Cu.-N. | -------- | ≡° ⌈ϟ a. ϟ p. |
| 26 | 59.96 | 26.8 | 31 | 22.7 | 84.2 | Variable | 6.7 | 5.3 | Ci.-S. E | Cu. | -------- | d° ϟ p. |
| 27 | 58.97 | 26.9 | 30.6 | 22.9 | 83.2 | S | 6.5 | 4 | Ci.-S., Ci. | Cu. | -------- | ϟ p. |
| 28 | 58.20 | 27.2 | 30.9 | 23.7 | 84.5 | S | 7.2 | 5.7 | Ci.-S. E | Cu.-N. SW | -------- | ϟ p. |
| 29 | 58.30 | 26.4 | 31 | 22.6 | 85 | Variable | -------- | 5.5 | Ci.-S. E, SE | Cu. W | -------- | Ω° a. ϟ p. |
| 30 | 58.69 | 25.9 | 31.5 | 22.3 | 88.7 | Variable | -------- | 7 | Ci.-S. | Cu.-N. NW | 4.1 | ⌈ϟ a. ⊤² d ϟ p p. |
| Mean | 758.39 | 25.9 | 30.3 | 22.1 | 85.3 | ------------ | 5.9 | 6.1 | ------------ | ------------ | -------- | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 81.3 | |

U of M

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 757.80 | 26.1 | 31.6 | 23.6 | 85.2 | NW quad. | 0.5 | 7.8 | Ci.-S. WNW | Cu.-N. NNE | 2.3 | ϟ$^2$ ○$^2$ a. ● ⊤ p. |
| 2 | 58.76 | 25.1 | 29 | 23.5 | 90 | N quad. | .3 | 7.2 | Ci.-S. WNW | Cu.-N. NE | 10.4 | ● a. p. |
| 3 | 59.46 | 26.1 | 30.9 | 23.3 | 84 | WNW, SE | .7 | 6 | Ci.-S. W | Cu. E | .5 | ○$^2$ ●$^0$ a. |
| 4 | 59.35 | 27 | 33 | 22 | 83 | ESE | .5 | 5.2 | Ci. SSW | Cu. E | 3.8 | Ω$^2$ ● a. |
| 5 | 58.84 | 25.1 | 28.8 | 23 | 90.2 | NW quad. | .8 | 8.5 | Ci.-S. SW | Cu.-N. ENE | 51.6 | ●$^2$ a. p. |
| 6 | 58.90 | 25.3 | 27.3 | 23.6 | 89.2 | W, NNE | .2 | 9.2 | ---------------- | Cu.-N. ENE | 16.5 | d ● a. |
| 7 | 58.32 | 25.9 | 30.8 | 23.5 | 90 | SSW | .3 | 8.8 | ---------------- | Cu.-N. NE | 4.8 | ● a. p. |
| 8 | 58.15 | 27.3 | 32 | 24.1 | 83.7 | SE quad. | .3 | 5.8 | Ci.-S. W | Cu. ENE | ------ | |
| 9 | 58.01 | 26.2 | 30 | 24 | 90.8 | WNW, ESE | .2 | 7.2 | Ci.-S. NW | Cu.-N. ENE | 11.7 | Ω a, ● a. p. |
| 10 | 57.75 | 26.6 | 31.4 | 23.8 | 88.5 | Variable | .5 | 6.5 | Ci.-S. W | Cu. E | ------ | d$^0$ a. |
| 11 | 57.85 | 27.3 | 31.4 | 23.2 | 83.7 | SSE | .8 | 4 | Ci. NW | Cu. ESE | ------ | Ω$^2$ a. |
| 12 | 58.53 | 27.4 | 32 | 24.6 | 80 | S | .8 | 5.2 | Ci. WNW | Cu. ESE, E | ------ | Ω$^2$ a. |
| 13 | 58.90 | 27.4 | 32.3 | 23.2 | 80.7 | SE quad. | .8 | 4.3 | Ci. | Cu. NE | ------ | Ω$^2$ ϖ$^2$ a. |
| 14 | 58.42 | 27.3 | 32 | 24.3 | 82.7 | S | .5 | 6 | Ci. SW | Cu. E | 4.3 | ϖ$^2$ Ω a. ● p. |
| 15 | 58.09 | 27.6 | 33 | 24 | 83.3 | S quad. | .5 | 5.2 | Ci. | Cu. | 2 | Ω a. ϖ ● p. |
| 16 | 58.66 | 27.6 | 32.5 | 23.9 | 80.2 | WNW, E | .5 | 5.8 | Ci. SW | Cu. E | ------ | ϖ$^2$ a. p. |
| 17 | 58.96 | 27.5 | 33 | 23.6 | 81.7 | SSE | .8 | 6.8 | Ci. W | Cu., Cu.-N. E | .5 | Ω$^2$ a. ○$^0$ ●$^0$ p. |
| 18 | 58.89 | 27.6 | 33.4 | 24 | 81 | SE | .8 | 7.8 | Ci. WSW | Cu. E | 2.8 | ○$^2$ a. ● p. |
| 19 | 59.60 | 26.6 | 33.4 | 24 | 82.3 | WNW, NE | .7 | 8.7 | Ci. S | Cu. | 4.6 | ○$^2$ a. ○$^0$ ● p. |
| 20 | 60.37 | 26.3 | 29.6 | 23.6 | 87 | NW | .7 | 8.5 | Ci., Ci.-S. SSW | Cu.-N. ENE | ------ | |
| 21 | 60.23 | 27 | 31.3 | 24.7 | 83.3 | NNW | 1 | 8.7 | Ci.-Cu. SW | Cu.-N. NE, ENE | 2 | d p. |
| 22 | 58.24 | 23.3 | 26.4 | 20.5 | 92.2 | NW quad. | 1.3 | 9.3 | A.-S. | N. N quad. | 38.4 | ●$^2$ d a. p. |
| 23 | 57.90 | 25.8 | 30.9 | 20.2 | 85 | SSE | 1.2 | 6.7 | Ci.-S. SW | Cu. E | 8.4 | ● ⊤ p. |
| 24 | 59.09 | 27.2 | 32.8 | 24 | 84.5 | S | .3 | 4 | Ci.-S. | Cu. S | ------ | Ω$^2$ a. |
| 25 | 60.02 | 28.2 | 33.4 | 24.6 | 83.3 | SE, SSE | .5 | 5.8 | A.-Cu., Ci. | Cu. SW | 1.5 | ● ⊤ a. ϟ p. |
| 26 | 60.12 | 27.6 | 32.4 | 23.8 | 85 | SE | .3 | 5.2 | Ci.-S. N | Cu. S quad. | ------ | Ω$^2$ a. ⛈ p. |
| 27 | 59.18 | 27.6 | 32.3 | 24.7 | 86 | NW quad. | .3 | 6.2 | Ci. | Cu.-N. SW, WSW | 2.5 | ● ⛈ ⊤ p. |
| 28 | 58.25 | 27.2 | 33.3 | 24.5 | 85.3 | SE quad. | .5 | 5.8 | Ci., Ci.-S. E | Cu. S, SE | 16.5 | Ω$^2$ a. ● ⛈ ϟ p. |
| 29 | 58.27 | 28.3 | 34.4 | 24.2 | 82.2 | N quad. | .3 | 5.8 | Ci.-S. E | Cu. WbyN | ------ | ϟ a. |
| 30 | 58.91 | 27.4 | 33.6 | 25.1 | 86 | W | .5 | 6.5 | Ci.-S. E | Cu. W | 1.3 | ⊤ a. p. ● ϟ p. |
| Mean | 758.79 | 26.8 | 31.6 | 23.6 | 85 | ------------ | .6 | 6.6 | ---------------- | ---------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 186.4 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.11 | 27.8 | 31.3 | 25.7 | 82.5 | N | --------- | 6.5 | Ci. | Fr.-N. N, NE | 2.5 | d$^0$ a. ●$^0$ p. |
| 2 | 58.75 | 26.6 | 29.4 | 25.2 | 84 | N | --------- | 8.2 | Ci.-S. | N., Fr.-N. NE | 7.9 | ●$^0$ a. p. ϖ$^0$ ϟ$^0$ d p. |
| 3 | 59.23 | 27.6 | 31.3 | 25.3 | 81.5 | N | --------- | 6.5 | Ci.-S. N | Fr.-N., Cu. E, NE | ------ | |
| 4 | 59.10 | 27.8 | 33.4 | 25.2 | 79.5 | Variable | 6.3 | 4.8 | Ci. | Cu. E, NE | ------ | Ω$^0$ a. ϖ$^0$ p. |
| 5 | 58.93 | 26.6 | 32.5 | 24.3 | 83.5 | NE, N | 7.2 | 5.7 | Ci. | Cu. NE | 9.4 | ● p. |
| 6 | 59.07 | 27.4 | 32.5 | 24.4 | 76.5 | NE | 9.1 | 7.8 | Ci.-S. E | Cu. NE | ------ | ●$^0$ a. |
| 7 | 58.62 | 27.5 | 32.3 | 24.8 | 77.3 | N quad. | 10.2 | 6 | Ci., Ci.-S. | N.-cf., N, NE | .8 | ϟ ●$^0$ p. |
| 8 | 57.87 | 27.6 | 32.3 | 25.4 | 85 | NNE | 11 | 7 | Ci. | Variable NE | ------ | d$^0$ a. ϟ p. |
| 9 | 57.24 | 28.4 | 34.2 | 25.2 | 82.5 | NE | 7 | 6.2 | Ci. | N. SE, NE | 8.1 | d$^0$ a. ϟ p. |
| 10 | 57.30 | 27.7 | 33.6 | 25 | 85.2 | NE | 5.9 | 6.7 | Ci. N | N., Cu. SE, NE | 5.3 | ● a. ϟ p. |
| 11 | 57.22 | 28 | 33.8 | 24.7? | 84 | NE | 5 | 4.5 | Ci. N | Cu. NE | ------ | Ω$^0$ a. ϖ$^0$ ϟ p. |
| 12 | 57.81 | 27.8 | 34.2 | 24.4 | 82.5 | NE quad. | 5 | 4.5 | Ci. NE | Cu. E | ------ | ϟ p. |
| 13 | 58.67 | 27.7 | 33.4 | 25.2 | 78.8 | E, NE | 8 | 5 | Ci. N | Cu. E, NE | ------ | |
| 14 | 58.30 | 27.8 | 33.7 | 25.3 | 81 | NE | 6.8 | 5.8 | A.-Cu. E | Cu. NE, E | ------ | |
| 15 | 57.94 | 27.2 | 33.2 | 23.8 | 85.2 | N quad. | 4.4 | 4.3 | Ci. | Cu. NE, N | ------ | Ω$^0$ a. ϟ p. |
| 16 | 58.36 | 27 | 34 | 22.5 | 80.5 | Variable | 4.2 | 5.5 | Ci. | Cu. E | ------ | Ω$^0$ a. ϟ p. |
| 17 | 58.49 | 27 | 33.8 | 22.7 | 84.8 | S, NE | 4 | 7.5 | Ci. | Cu.-N. NE | ------ | ϟ p. |
| 18 | 58.56 | 27.4 | 33.7 | 23.9 | 83.8 | N | 4 | 6.2 | Ci. N | Cu.-N. N | ------ | Ω$^0$ a. ϟ p. |
| 19 | 59.34 | 27.9 | 34.3 | 24 | 81.2 | Variable | 3.8 | 8.3 | Ci.-S. E | Cu NE | 6.1 | Ω$^0$ ϖ ⊕$^0$ ○$^0$ a. ϟ p. |
| 20 | 60.06 | 28.1 | 34.2 | 24.3 | 80.7 | NE quad | 5.3 | 8.7 | Ci.-S. E, NE | Cu.-N. E | .8 | ● ⛈ a. ϟ p. |
| 21 | 60.37 | 27.3 | 32.9 | 24.1 | 85.7 | NE quad. | 5.5 | 9.3 | Ci. S. NE | N. E, NE | 10.4 | ● a. p. ⛈ p. |
| 22 | 58.80 | 25.4 | 29.3 | 23 | 91.7 | NE | 6.4 | 10 | Ci.-S. | N. NE | 17.7 | ●$^0$ a. ● p. |
| 23 | 57.20 | 26 | 33.3 | 23.2 | 86.2 | Variable | 6.6 | 6.8 | Ci.-S. SW | Fr.-N. SW | .5 | ⊕$^0$ ○$^0$ a. ●$^0$ p. |
| 24 | 58.63 | 25.8 | 34 | 23.8 | 89.7 | S quad. | 5 | 5 | Ci.-Cu. S | N. SW | 35.8 | ●$^2$ ⛈$^2$ p. |
| 25 | 59.79 | 25.9 | 34.9 | 23 | 88.8 | S quad. | 5.8 | 4.7 | Ci. | Cu.-N., N. SW | 15.7 | Ω$^2$ a. ⛈$^2$ ● p. |
| 26 | 60.11 | 25.6 | 33.7 | 22.4? | 90.3 | S | 4.4 | 6.2 | A.-Cu. S | N. S | 28.8 | Ω a. ⛈ ●$^2$ ϟ p. |
| 27 | 58.77 | 26.5 | 34.3 | 23.1 | 86 | SW, S | 4.8 | 5.8 | Ci. N | N S | 3.8 | Ω a. ⛈ ● ϟ p. |
| 28 | 58.22 | 27 | 32.9 | 23.2 | 84.2 | Variable | 4.8 | 5.3 | Ci.-S. SW | Variable SW | ------ | ⛈ ⊕$^0$ ○$^0$ ϟ p. |
| 29 | 58.21 | 27.6 | 33.8 | 23.3 | 82 | NW quad. | 5.8 | 3.8 | Ci. | Cu., Cu-N. SW | ------ | ⊤$^0$ ϟ p. |
| 30 | 58.68 | 26.7 | 33.3 | 24 | 86.7 | SSW | 3.4 | 5.5 | Ci.-S. | Cu. SW, NW | ------ | ⊤$^0$ a. ϟ p. |
| Mean | 758.59 | 27.2 | 33.1 | 24.1 | 83.7 | ------------ | 5.9 | 6.3 | ---------------- | ---------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 153.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 757.50 | 25.9 | 32.2 | 22.3 | 88 | ENE | 1.3 | 7.8 | Ci.-S. | Cu.-N. NE | 10.2 | ●° a. ⊤ d° p. |
| 2 | 58.53 | 24.3 | 30 | 22.3 | 93 | NE | 1 | 7.5 | A.-Cu. | S.-Cu. ENE | 13.1 | ●° a. p. ϟ p. |
| 3 | 59.17 | 25.2 | 31.4 | 21.7 | 88.7 | NE | 1 | 5.3 | Ci.-S. | S.-Cu. ENE, E | 8.6 | ● a. |
| 4 | 59.11 | 25.7 | 32.7 | 21.5 | 87.2 | NE | 1.2 | 5.7 | Ci.-S. SbyW | S.-Cu. ENE | ------ | ⌒° a. Φ p. |
| 5 | 58.80 | 24.7 | 31.1 | 22.2 | 92.5 | NE | 1 | 7.5 | Ci.-S. | N. NE | 28.7 | ≡ ●° a. ● p. |
| 6 | 58.75 | 26.2 | 32.2 | 22.2 | 81.7 | NE | 1.7 | 6.3 | Ci.-S. | S.-Cu. NE | ------ | d° ⌒² a. ψ p. |
| 7 | 58.02 | 27 | 33.4 | 23.2 | 83 | NE | 1.5 | 6.2 | Ci. | S.-Cu. NE | .5 | ≡ a. d ϟ p. |
| 8 | 57.84 | 26.3 | 31.1 | 23.4 | 88.8 | ENE | 1 | 3.7 | Ci. | S.-Cu. NE | 33.2 | ☈ ● Φ p. |
| 9 | 57.60 | 25.8 | 30.4 | 22.7 | 88.8 | NE | 1 | 4.3 | Ci.-S., A.-Cu. | S.-Cu. E | 6.6 | ●° ⊤ Φ p. |
| 10 | 57.47 | 25.6 | 29.7 | 23.1 | 91.2 | NE | 1 | 5.8 | Ci.-S. | S.-Cu. E | 19.6 | ●° a. ● ⊤ ϟ p. |
| 11 | 57.39 | 26.3 | 31.4 | 22.5 | 85 | NE | 1 | 4 | A.-Cu., Ci.-S. | S.-Cu. E | ------ | ⊤° ψ ϟ p. |
| 12 | 58.18 | 25.9 | 30.9 | 22.5 | 88.8 | NNE | 1 | 4.5 | Ci.-S. | N. E | 8.4 | ●° ⊤ ⌒° Φ p. |
| 13 | 58.86 | 25.8 | 31.5 | 21.3 | 86 | NE | 1 | 2.8 | Ci. | S.-Cu. E | ------ | Ω² a. d Φ p. |
| 14 | 58.14 | 26.4 | 32.7 | 22.5 | 85.3 | NE | 1.2 | 3.3 | Ci. | Cu. ENE | ------ | Φ Ω a. ☈ Φ p. |
| 15 | 57.85 | 26.8 | 33.4 | 22.3 | 83.2 | NNE | 1.2 | 1.5 | Ci. | Cu. | ------ | Ω a. Φ p. |
| 16 | 58.46 | 26.5 | 32.7 | 21.8 | 82.7 | NE quad. | 1.2 | 1.7 | Ci. | Cu. | ------ | Ω a. |
| 17 | 58.52 | 26.6 | 32.5 | 22.5 | 80.8 | NNE | 1.2 | 4.8 | Ci. | S.-Cu. | ------ | Φ a. ☈° ϟ p. |
| 18 | 58.63 | 26.1 | 32.8 | 22.3 | 83.3 | NE | 1.2 | 5.2 | Ci. SEbyE | S.-Cu. | ------ | ϟ p. |
| 19 | 59.40 | 26.1 | 32 | 22.4 | 83.5 | NNE, NE | 1.2 | 6.7 | Ci.-S. SEbyE | S.-Cu. NE | 1.5 | ψ ◯ a. d° ⊤ p. |
| 20 | 60.15 | 25.9 | 32.1 | 22.5 | 86.5 | NE | 1.2 | 7.2 | A.-Cu. SE | S.-Cu. ENE | ------ | ◯ a. ⊤ p. |
| 21 | 59.98 | 26.3 | 31.5 | 23.3 | 87.8 | NE | 1.2 | 8.2 | A.-Cu. SE | S.-Cu. NE | 7.9 | p a. d° p. |
| 22 | 57.39 | 23.4 | 25.5 | 20.3 | 93.8 | NE | 2.3 | 9.8 | Ci.-S. | N. NE, N | 79.3 | ●° a. ● ɏ° p. |
| 23 | 57.25 | 27.2 | 32.2 | 23.3 | 79.3 | S quad. | 2.5 | 5.7 | Ci., A.-Cu. E, SSW | S.-Cu. SW | ------ | |
| 24 | 58.69 | 27.4 | 32.2 | 23.3 | 80.2 | S quad. | 1 | 2 | Ci.-S. | S.-Cu. SSW | ------ | |
| 25 | 59.69 | 27.4 | 31.9 | 23.9 | 83.5 | E quad. | 1.3 | 4 | Ci. NNW | S.-Cu. SSW, SW | 1.3 | ⌒° d° a. ϟ p. |
| 26 | 59.89 | 27.4 | 32.1 | 24.3 | 83.2 | E quad. | 1.2 | 5.8 | Ci.-S. | S.-Cu., Cu. SW | ------ | d° ⊤ a. ϟ ⊤° p. |
| 27 | 58.74 | 27.4 | 32.5 | 23.1 | 82.7 | E quad. | 1 | 4.2 | Ci. | S.-Cu. SW | ------ | ϟ p. |
| 28 | 58 | 28 | 32.7 | 23.8 | 80 | SW | 1.5 | 4.2 | Ci. NWbyN | S.-Cu., Cu. SW | ------ | ϟ p. |
| 29 | 58.22 | 27.6 | 32.8 | 23.9 | 83.2 | NE quad. | 1.3 | 3.7 | Ci. | Cu. WbyN | ------ | ϟ p. |
| 30 | 58.61 | 27 | 33.5 | 23.5 | 85.7 | NNE | 1.2 | 5.2 | Ci.-S. | S.-Cu. NNW | ------ | d° ϟ p. |
| Mean | 758.49 | 26.3 | 31.8 | 22.6 | 85.6 | ------------ | 1.3 | 5.2 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 218.9 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.10 | 26.8 | 32.1 | 23.5 | 82.3 | NNE, NE | 15.6 | 6.7 | A -Cu. NE | Cu., Cu.-N. NE | 54.4 | ● p. |
| 2 | 58.81 | 26.4 | 30.5 | 22.4 | 76.5 | NNE, NE | 17.8 | 7.7 | A.-Cu. E, ESE | Cu. NE | 1 | ● a. |
| 3 | 59.28 | 26.8 | 33.8 | 22.6 | 81.7 | NE | 8.8 | 5.3 | A.-Cu. E | Cu. ESE | 8.6 | d a. ● p. |
| 4 | 59.44 | 27 | 31.9 | 22.6 | 82.2 | NE | 14.1 | 6 | Ci., Ci.-S. | Cu.-N. ENE, NE | 3.1 | d ● a. ●° p. |
| 5 | 58.92 | 27 | 33.5 | 24.1 | 78.2 | NNE | 13.2 | 5.7 | Ci.-S. | Cu. NE | 3.8 | ● p. |
| 6 | 59.22 | 27.2 | 32.5 | 24.7 | 73.8 | NNE | 15.2 | 2.5 | Ci. | Cu. ENE | ------ | ≡° a. |
| 7 | 58.74 | 27.2 | 33 | 24.3 | 80.5 | NNE | 13.6 | 3.8 | Ci., Ci.-S. | Cu. NE | 44.8 | d a. p. |
| 8 | 58.27 | 26.1 | 31.2 | 23 | 91.7 | NE | 10 | 9.3 | Ci.-S. | Cu.-N. ENE | 41.7 | ● d a. p. |
| 9 | 57.67 | 26 | 33 | 23.5 | 91.7 | NE quad. | 6.2 | 8 | Ci.-S. | Cu. ENE | 104.1 | ● a. ●² ⊤° p. |
| 10 | 57.67 | 27.7 | 33.2 | 24 | 84.3 | NE quad. | 7.8 | 5 | Ci. | Cu. ENE | 32.7 | ● p. |
| 11 | 57.44 | 28 | 33.3 | 23.4 | 84.8 | NE, ENE | 7 | 2.2 | Ci. | Cu. | ------ | d a. |
| 12 | 58.46 | 28.2 | 33.5 | 23.5 | 82.2 | NE, ENE | 7.8 | 2.3 | Ci. | Cu. | ------ | |
| 13 | 59.05 | 28.5 | 33.9 | 25.5 | 76 | NE | 9.1 | 1.7 | Ci. | Cu. ENE | ------ | ≡° a. |
| 14 | 58.40 | 28.5 | 34.2 | 25 | 78.7 | NE quad. | 6.6 | 1.8 | Ci. | Cu. NE | ------ | ≡° a |
| 15 | 57.92 | 28.1 | 35 | 22.6 | 79.3 | NE | 4.7 | 2.3 | Ci. | Cu. E | 1.5 | |
| 16 | 58.44 | 26.9 | 34.4 | 22.6 | 84.3 | ENE | 4.1 | 3 | A.-Cu. | Cu. ENE | 18.8 | d a. ● p. |
| 17 | 58.68 | 27.4 | 33.7 | 21.9 | 82.9 | NE | 5.4 | 4.5 | Ci. | Cu. NE | ------ | |
| 18 | 58.76 | 26.5 | 34.1 | 22.5 | 86 | NE | 3 | 6.3 | Ci.-S. | Cu.-N. NW | ------ | d° p. |
| 19 | 59.44 | 27.5 | 31.9 | 22.9 | 81.3 | E, NE | 3.9 | 5 | Ci.-S. | Cu. NW, WSW | ------ | d° a. ϟ° p. |
| 20 | 60.36 | 28.4 | 34.6 | 23.5 | 79.5 | NE | 8.2 | 5.8 | A.-Cu. SE | Fr.-Cu. NE | ------ | ϟ° p. |
| 21 | 60.42 | 27.6 | 33.4 | 24.6 | 79.5 | NNE | 9.3 | 7.8 | A.-Cu. SE | Fr.-N., Cu. NE | 12.5 | d° a. ● p. |
| 22 | 57.73 | 26.1 | 28.5 | 20.? | 89.3 | NNE | 14 | 9.3 | Ci.-S. | Fr.-N. NE | 52.8 | ●° a. d² ●² p. |
| 23 | 56.55 | 26.3 | 31.8 | 21.7? | 84.8 | S | 8 | 6 | Ci.-S. | Cu. SSW | ------ | ● d a. |
| 24 | 58.27 | 27.3 | 33.7 | 23.5 | 84.2 | SSW | 4.5 | 3.2 | Ci. | Cu. SSW | ------ | ≡° a. |
| 25 | 59.40 | 27.6 | 33.6 | 22.8 | 80.8 | SW, SSW | 5.1 | 1.7 | ------------ | Cu. SW | ------ | ≡° a. ϟ p. |
| 26 | 59.48 | 27.5 | 33.8 | 23.7 | 79.7 | SSW | 5.7 | 2.3 | Ci. | Cu.-N. SW | ------ | ●° a. ϟ p. |
| 27 | 58.46 | 27.9 | 33.5 | 24.2 | 79.2 | SSW | 6.3 | 2.8 | A.-Cu. SSW | Cu. SW | ------ | ϟ° p. |
| 28 | 57.73 | 26.6 | 31.1 | 24.1 | 86 | SW | 6.4 | 5.2 | Ci.-S. | Cu. WSW | 1 | ●° ⊤° a. ϟ p. |
| 29 | 58 | 27 | 35.5 | 23 | 84.7 | Variable | 3.9 | 4 | Ci., Ci.-S. | Cu. W | .3 | ●° ☈ p. |
| 30 | 58.64 | 26.5 | 33.7 | 21.9 | 85.3 | NNE | 2.2 | 3.7 | Ci., Ci.-S. | Cu. WNW, W | 5.9 | ☈ ● p. |
| Mean | 758.59 | 27.2 | 33.1 | 23.3 | 82.4 | ------------ | 8.2 | 4.7 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 387 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi=14°\ 00'$ N; $\lambda=121°\ 55'$ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. |  |  |
|  | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.17 | 27 | 29.2 | 24.9 | 75.5 | NE | 29.7 | 4.8 | A.-Cu. NE | S.-Cu. NE | ------ |  |
| 2 | 59.66 | 26.7 | 28.7 | 24.8 | 71.7 | NE | 32.1 | 5.7 | Ci. SSE, S | S.-Cu. NE | ------ |  |
| 3 | 59.67 | 26 | 26.7 | 24 | 82.7 | N quad. | 27.9 | 8 | A.-Cu. NE, ENE | S.-Cu. NE | 25.2 | d° a. p. ● p. |
| 4 | 59.99 | 26.1 | 28.9 | 22.4 | 85 | NE quad. | 15.6 | 7.3 | A.-Cu. E | S.-Cu. NE | .5 | d$^2$ d° p. |
| 5 | 59.54 | 26.8 | 28.4 | 24.8 | 78.7 | NE | 25.1 | 7.5 | A.-Cu. NE | S.-Cu. NE | .5 | ●° a. d° p. |
| 6 | 59.92 | 27.1 | 29.2 | 25 | 72.2 | NE | 30.5 | 4.5 | Ci. | S.-Cu. NE | ------ |  |
| 7 | 59.54 | 26.8 | 29.4 | 24.5 | 75.2 | NE | 30 | 4.5 | A.-Cu. E | Cu. NE | ------ | d$^2$ a. |
| 8 | 58.97 | 26.7 | 28.5 | 24.4 | 81.7 | NNE, NE | 25.7 | 8.5 | A.-Cu. NE | S.-Cu. NE | ------ | d a. |
| 9 | 57.82 | 26.7 | 29.5 | 23.3 | 85.3 | NE, N | 12.7 | 7.2 | A.-Cu. NE, E | S.-Cu. NE | 21.6 | ☈° ● ⌒° d p. |
| 10 | 57.76 | 26.7 | 29.1 | 22 | 84 | N quad. | 10.4 | 4.3 | A.-Cu. ENE | S.-Cu., Cu. NE, E | ------ | ⊕$^2$ p. |
| 11 | 57.21 | 27.9 | 32.5 | 22.7 | 80.5 | NE, SW | 7.3 | 2.7 | Ci. | Cu.-N. SSE | ------ | ⊕° Ω ≡° ☈ ⊕$^2$ ↯ |
| 12 | 58.33 | 27 | 29.5 | 22.7 | 83 | N quad. | 14.3 | 5.3 | A.-Cu. NE, E | S.-Cu. NE | ------ | ⊕ a. ⊕° p. |
| 13 | 59.24 | 28.3 | 32.1 | 25.4 | 74.5 | N quad. | 13 | 3.7 | A.-Cu. E | Cu. NE, E | ------ | ⊕° p. |
| 14 | 58.35 | 27.9 | 31 | 23.2 | 77.2 | N quad. | 11.9 | 2 | Ci. | Cu. NE | ------ | ⊕$^2$ a. p. |
| 15 | 57.98 | 27.2 | 31.4 | 21.9 | 79.8 | SW, N | 10.7 | 3.7 | A.-Cu. E | Fr.-Cu. NE | ------ | ⊕$^2$ a. p. |
| 16 | 58.40 | 27.1 | 29.6 | 22.8 | 80.7 | Variable | 11.8 | 4.5 | Ci.-Cu. NE | S.-Cu. NE, N | ------ | ⊕° p. |
| 17 | 58.58 | 27 | 30.7 | 22.8 | 82.2 | SW, NW | 11 | 4.7 | Ci. | S.-Cu. N | 3.6 | ↯° p. |
| 18 | 58.52 | 27.5 | 32 | 23.6 | 77.7 | SW, N | 7.2 | 8.2 | A.-Cu. S | Cu.-N. SW | ------ | ●° a. ↯ p. |
| 19 | 59.59 | 27 | 30.9 | 23.7 | 83.5 | NE, N | 9.7 | 9.5 | A.-Cu. E | S.-Cu. NW | 8.4 | ☈ ● d° p. |
| 20 | 60.40 | 27.3 | 30 | 23.5 | 81.8 | N quad. | 14.7 | 8.8 | Ci.-S. | S.-Cu. NE | 3 | ☈ d$^2$ ↯° p. |
| 21 | 60.95 | 28.1 | 29.5 | 25.3 | 80 | NE | 24.6 | 8.8 | A.-Cu. E | S.-Cu. NE | 2.4 | ●° a. d p. |
| 22 | 59.30 | 27.5 | 28.5 | 23.8 | 81.3 | NE | 29.7 | 10 | A.-Cu. NE | N. NE | 85.6 | ● a. p. ↙° p. |
| 23 | 55.22 | 25.8 | 27.4 | 23.2 | 88.2 | NE, SE | 32.4 | 8.7 | Ci.-S. | S.-Cu. ENE, S | 10.4 | ↙ ● a. ●° p. |
| 24 | 57.76 | 27.5 | 32.2 | 24 | 77.3 | S | 10.2 | 4.5 | Ci. SE | S.-Cu. SW | 3.3 | ⌒° ↯° ☈ p. |
| 25 | 58.94 | 27.3 | 32.4 | 22.2 | 78.7 | SW | 9.3 | 4.3 | Ci. | Cu. S, SW | ------ | ●° a. ☈ ⌒° ↯° p. |
| 26 | 59.02 | 28.2 | 33.3 | 23.7 | 78.3 | SW | 9 | 6.2 | Ci. NE, ENE | S.-Cu., Cu.-N. SW, NW | 6.3 | ↯ a. ☈ ● p. |
| 27 | 58.33 | 26.7 | 32.4 | 23.2 | 82.8 | SW | 9.4 | 6.8 | A.-Cu. SW | S.-Cu. S | 7.4 | d$^2$ ◯$^2$ a. ☈ ● p. ↯ |
| 28 | 57.48 | 26.2 | 31.4 | 23 | 85.8 | SW | 8.5 | 6.8 | A.-Cu. W | S.-Cu. WNW, NW | 7.6 | ⌒° d$^2$ a. ●° ☈ p. |
| 29 | 58.16 | 26.4 | 30.4 | 22 | 84.2 | SW | 8.6 | 5.8 | Ci. SW, W | Cu.-N. W | 40.6 | ◯° a. ☈ d° ↯° p. |
| 30 | 58.97 | 26.2 | 29.4 | 22.5 | 87.5 | N quad. | 12.7 | 5.7 | Ci. ENE | N. N | 57.1 | ☈ ●$^2$ a. ☈° ↯° p. |
| Mean | 758.76 | 27 | 30.1 | 23.5 | 80.6 | ------ | 16.9 | 6.1 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 283.5 |  |

### PARACALE.

[$\phi=14°\ 17'$ N; $\lambda=122°\ 47'$ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.29 | 26.7 | 30.3 | 25.5 | 83 | NNE | 18.4 | 8.8 | Ci.-S. | Cu., S.-Cu. NNE | ------ | ● a. |
| 2 | 59.84 | 27 | 30.7 | 25 | 74.8 | NNE | 18.3 | 7.5 | Ci., Ci.-S. | Cu. NNE | 0.8 |  |
| 3 | 59.62 | 25.8 | 27.7 | 24.5 | 90.3 | NNE | 13.7 | 9.3 | Ci.-S. | S.-Cu. NNE | 6.6 | ● a. p. ⊤ p. |
| 4 | 60.02 | 25.6 | 30 | 23.4 | 88.5 | ENE | 9.4 | 6.7 | Ci.-S. | Cu. E | 34 | Ω a. ● a. p. |
| 5 | 59.82 | 26.6 | 30.9 | 24.1 | 84 | ENE | 16.2 | 7.7 | Ci.-S. | Cu. NE | 5.1 | ● a. |
| 6 | 60.24 | 27.1 | 30.7 | 25.3 | 76 | ENE | 17.1 | 3 | Ci. | Cu. NE | .5 | ●° p. |
| 7 | 59.48 | 27.2 | 30.6 | 23.9 | 81.5 | NE quad. | 17.5 | 8 | Ci. | Cu. NE | 4.6 | ● a. d° p p. |
| 8 | 58.98 | 26.2 | 28.3 | 24.6 | 91.7 | NE quad. | 13.5 | 9 | Ci.-S. | Cu., S.-Cu. NE | 27.3 | ● a. p. |
| 9 | 57.85 | 26.2 | 30.3 | 23.5 | 91 | E quad. | 8.6 | 9.7 | Ci.-S. | Cu. ESE | 13 | d ⊤° a. ● a. p. |
| 10 | 57.76 | 26.6 | 31.3 | 22.3 | 87.5 | E | 8.1 | 6 | Ci. | Cu. E | ------ | Ω a. ⊕ p. |
| 11 | 57.36 | 27.2 | 32.1 | 23.3 | 87.2 | NNE | 5.2 | 3.2 | Ci. | Cu. Variable | ------ | Ω$^2$ a. ⊤ Ω p. |
| 12 | 58.32 | 27.9 | 32 | 23.7 | 85.2 | NE | 6.9 | 3.8 | Ci. | Cu. E quad. | ------ | Ω a. ⌈ p. |
| 13 | 59.24 | 27.6 | 32.3 | 24.7 | 82.7 | NE quad. | 6.7 | 5.5 | Ci. | Cu. E quad. | ------ | p a. |
| 14 | 58.50 | 27.4 | 32.3 | 23.3 | 82.7 | E quad. | 6.2 | 4.3 | Ci. | Cu. E | ------ | d° a. |
| 15 | 58.07 | 27.2 | 32.4 | 22.8 | 84.8 | NE quad. | 5.3 | 3.2 | Ci. | Cu. E | ------ | Ω a. |
| 16 | 58.60 | 26.6 | 32 | 23.2 | 88 | NNE | 5.6 | 6 | Ci. | Cu. S | ------ | Ω d° a. p. ⊕ p. |
| 17 | 58.58 | 27.1 | 32.7 | 22.9 | 86.8 | NE quad. | 5.9 | 4.5 | Ci. | Cu. Variable | ------ | Ω a. ⊤ p. |
| 18 | 58.67 | 26.1 | 31.3 | 23.4 | 90.6 | SW | 3.5 | 7.3 | A.-Cu. E | Cu. | 2.3 | Ω d° a. ● ↯ Ω p. |
| 19 | 59.52 | 25.6 | 28.8 | 22.7 | 92.2 | W | 3.6 | 10 | Ci.-S. | S.-Cu. NNW | 1.6 | Ψ° Ω d a. ↯ p. ●° |
| 20 | 60.56 | 27.7 | 33 | 23.9 | 85 | NE | 8.2 | 8.3 | Ci.-S. | Cu. ENE | ------ | Ω a. |
| 21 | 61.19 | 27.8 | 31 | 25.3 | 84.5 | ENE | 14.9 | 10 | Ci.-S. | Cu. NE | 9.3 | ● a. p. |
| 22 | 59.24 | 27.4 | 31.3 | 24.8 | 87.2 | ENE | 19.7 | 10 | Ci.-S. | S.-Cu. ENE | 43.5 | ● a. p. |
| 23 | 55.84 | 27 | 30.2 | 23.4 | 84 | E quad. | 17.1 | 8.2 | Ci.-S. | S.-Cu. E, SSE | .3 | ● ↙° a. ●° p. |
| 24 | 57.82 | 27.5 | 34.3 | 22.7 | 81.5 | S quad. | 6.1 | 2.2 | Ci. | Cu. S quad. | ------ | Ω$^2$ a. Ω ↯ p. |
| 25 | 59.09 | 27.3 | 32.6 | 23.4 | 85.2 | N quad. | 4.3 | 3.2 | Ci. | Cu. S quad. | ------ | Ω a. ↯ p. |
| 26 | 59.08 | 28.5 | 34.8 | 24.4 | 81.5 | SW, NNE | 7.3 | 3.7 | Ci. | Cu. SSW | ?. | Ω a. ☈ p. |
| 27 | 58.18 | 28 | 34.5 | 24.3 | 85.3 | SW | 5.4 | 8 | Ci.-S. | Cu. SSW | ------ | ●° a. ⊤ ↯ a. p. |
| 28 | 57.32 | 27.5 | 33.2 | 24.3 | 81 | SW | 9.1 | 6.3 | Ci. | Cu. W quad. | ------ | Ω a. d° ⊤ ↯ p. |
| 29 | 58.42 | 27.7 | 32.4 | 24.1 | 82.8 | N | 5 | 6.3 | Ci. | Cu. N | ------ | d° a. Ω ↯ p. |
| 30 | 59 | 26.8 | 31.6 | 23.9 | 86.5 | N | 3.6 | 6.7 | Ci.-S. | Cu. N | .8 | Ω a. p. d a. |
| Mean | 758.85 | 27 | 31.5 | 23.9 | 85.1 | ------ | 9.7 | 6.5 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 149.7? |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 758.82 | 25.8 | 32 | 19.1 | 69.2 | E quad. | 2.7 | 3.8 | Ci. SW | Cu. E | ------ | Ω² a. |
| 2 | 59.18 | 25.7 | 31.6 | 20.5 | 70.8 | E quad. | 2.5 | 3.5 | Ci. | Cu., S.-Cu. E | ------ | Ω a. |
| 3 | 59.39 | 26.3 | 33 | 19.2 | 71.5 | E quad. | 1.8 | 4.8 | A.-Cu. E | Cu. NE | 1.8 | Ω a. |
| 4 | 59.89 | 25.6 | 29.2 | 23 | 82.1 | E | 2.3 | 8.7 | A.-Cu. ESE | N. E quad. | .3 | ● d a. |
| 5 | 59.22 | 26.4 | 32 | 22 | 71.8 | E quad. | 2.7 | 5.7 | Ci. SE | S.-Cu., Cu. E | ------ | ↙° ⊕ p. |
| 6 | 59.48 | 25.7 | 31.2 | 20.5 | 71 | E quad. | .3 | 3.2 | Ci. | Cu., Fr.-Cu. E | ------ | Ω a. |
| 7 | 59 | 25.3 | 31.2 | 19.5 | 73 | E quad. | 2.7 | 3.3 | A.-Cu. ESE | Cu. E | ------ | Ω a. |
| 8 | 58.42 | 26.4 | 32.3 | 19.6 | 72.7 | E | 2.7 | 3.8 | A.-Cu. ESE | Cu. E | ------ | Ω a. ⊕° p. |
| 9 | 57.40 | 27.5 | 32 | 22.4 | 70.7 | E quad. | 2.7 | 6.3 | A.-Cu. NE | Cu. E | ------ | ↙° ⌒° ⊕ p. |
| 10 | 57.02 | 26.9 | 34.4 | 21.9 | 75.7 | NE quad. | 1.7 | 6.8 | A.-Cu. ESE | Cu. E | 42.7 | ●² ☈ p. |
| 11 | 56.92 | 27.1 | 33.9 | 23 | 80.5 | ENE | 1.2 | 6.5 | Ci.-S. | Cu. SE | ------ | ≡° a. ☈ p. |
| 12 | 57.77 | 27.5 | 33.5 | 23 | 75.7 | NE quad. | 1.7 | 4.7 | A.-Cu. E | Cu. SE | ------ | Ω a. ⊤ p. |
| 13 | 58.64 | 27.8 | 33.9 | 23 | 72.2 | E quad. | 2.2 | 3.7 | A.-Cu. E | Cu. SE | .5 | Ω² a. p ☈ p. |
| 14 | 58.08 | 28.2 | 34.6 | 22.6 | 70.5 | N quad. | 1 | 5.3 | Ci. | Cu.,N. SW | ------ | Ω² a. ⊕° p. |
| 15 | 57.62 | 27.9 | 34.6 | 23.4 | 74.3 | N quad. | 1 | 5.7 | A.-Cu., Ci. | Cu. SW | ------ | Ω ≡° a. ⊤° p. |
| 16 | 57.84 | 28 | 34.2 | 22.6 | 72.2 | ESE | 1.2 | 6 | Ci. | Cu. ESE | 2 | Ω ≡° a. |
| 17 | 58.25 | 28 | 33.9 | 22.6 | 72.3 | E quad. | 1 | 7.2 | A.-Cu. E | N. SW | ------ | ● a. ⚡ p. |
| 18 | 58.16 | 28.3 | 34 | 23.4 | 71 | ENE | 1.2 | 5.7 | Ci. | Cu. SE, ESE | ------ | Ω ≡ a. ☈ p. |
| 19 | 59.08 | 28.7 | 34 | 24.5 | 72.3 | ESE, NE | 1.2 | 7.8 | A.-Cu. E | Cu. E, ESE | ------ | ◯° a. ☈ p. |
| 20 | 60.26 | 27 | 31.3 | 23.6 | 78.5 | E quad. | 1.8 | 7.8 | Ci.-S. | N. E | 1.8 | ● a. ⚡ p. |
| 21 | 60.75 | 27.8 | 33.8 | 22.8 | 70.5 | NE quad. | 2 | 6.3 | A.-Cu. ESE | Cu. E quad. | ------ | Ω a. ⚡ p. |
| 22 | 59.22 | 28.4 | 33.7 | 23 | 68 | E | 2 | 6.3 | Ci.-S. SE | Cu. E quad. | ------ | Ω° a |
| 23 | 56.21 | 24.7 | 27.5 | 23 | 86.2 | N quad. | 2.2 | 9.5 | Ci.-S. SE | N. NE quad. | 24.7 | d a. p. ● p. |
| 24 | 57.26 | 25.8 | 30.4 | 23.4 | 85.2 | S quad. | 3.2 | 7.5 | Ci.-S. | N. S | ------ | ● a. ↙° d° ⚡ p. |
| 25 | 58.96 | 26.3 | 32.4 | 22.2 | 85.3 | S quad. | 1.5 | 6.7 | Ci. | N., Cu. SSW | 3.1 | Ω a. ● ☈ p. |
| 26 | 59.05 | 26.9 | 32 | 23.9 | 84.3 | SSW, S | 1.3 | 7.3 | Ci., Ci.-S. | Variable S quad. | 9.7 | ≡° a. ● ☈ ↙° p. |
| 27 | 58.13 | 26.5 | 31.5 | 24.1 | 85 | S, SSW | 2 | 9.5 | Ci.-S. NW | N. SSW | 3 | d² a. p. ● p. |
| 28 | 57.60 | 26.4 | 32.5 | 23.5 | 84 | SW quad. | 1.2 | 8 | A.-Cu. NNW | Cu.-N. WNW | 5.3 | d° a. ● ⊤ p. |
| 29 | 58.12 | 27 | 33.4 | 22.4 | 81.3 | ENE | .7 | 6.3 | A.-Cu. | Cu. E | 2.8 | Ω² ≡° a. ⚡ ● p. |
| 30 | 58.63 | 27.8 | 33.6 | 24.4 | 79.7 | E quad. | 1.3 | 7.3 | Ci. SE | N. NNW | .8 | d² ⚡ ⊤ p. |
| Mean | 758.48 | 26.9 | 32.6 | 22.4 | 75.9 | ------ | 1.9 | 6.2 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 98.5 | |

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.48 | 27.8 | 35.9 | 22 | 73.3 | SE, NW | 12.8 | 2 | Ci. | Cu., S.-Cu. | ------ | |
| 2 | 58.86 | 27.2 | 34.6 | 21.6 | 78 | Variable | 11.7 | 3.3 | Ci. | Cu., S.-Cu. | ------ | |
| 3 | 59.18 | 27.3 | 34.4 | 20.9 | 75.8 | NW | 11.2 | 2 | Ci. | Cu., S.-Cu. | ------ | |
| 4 | 59.13 | 28.4 | 35.9 | 23.8 | 71.2 | SE quad. | 14.9 | 5.3 | Ci., A.-Cu. | Cu., S.-Cu. | 0.8 | ⚡ ⊤° d° ⊕ p. |
| 5 | 58.79 | 27.8 | 35.1 | 22.6 | 75.8 | SE, NW | 11.6 | 3.5 | Ci. | S.-Cu. | ------ | ⊕² p. |
| 6 | 58.80 | 28.3 | 36.3 | 22.7 | 65 | SE | 14.8 | 2.7 | Ci. | Fr.-Cu. SE | ------ | |
| 7 | 58.47 | 28.5 | 36.8 | 22.7 | 67.8 | SE quad. | 13.7 | 3.7 | Ci. | S.-Cu. | ------ | |
| 8 | 57.94 | 28 | 36.8 | 23.1 | 73.3 | SE, NW | 15.1 | 3.3 | ------ | S.-Cu. | ------ | |
| 9 | 57.11 | 27.8 | 36.1 | 23 | 80 | Variable | 11 | 5.8 | A.-Cu. | S.-Cu. SE | 18.8 | ⚡ ☈ p p. |
| 10 | 56.85 | 28 | 36.7 | 22.9 | 79.5 | SE | 11.5 | 3.2 | ------ | Cu., S.-Cu. | 10.2 | ⚡ p p. |
| 11 | 56.88 | 27.8 | 33.6 | 23 | 85 | NW | 11.7 | 2.8 | Ci. | Cu., S.-Cu. | ------ | ⚡ p. |
| 12 | 57.45 | 28.5 | 34.4 | 23.7 | 82.2 | NW | 10.5 | 2.8 | ------ | Cu., S.-Cu. | ------ | ⊤° p. |
| 13 | 58.30 | 29.5 | 37.6 | 23.8 | 75.2 | SE quad. | 13.2 | 4.8 | ------ | Cu., S.-Cu. | ------ | ⊤° ⚡² p. |
| 14 | 58.06 | 27.5 | 32 | 23.2 | 83.8 | NW | 14.8 | 2.5 | Ci. | Cu. | ------ | |
| 15 | 57.64 | 27.6 | 31.4 | 23.6 | 81.7 | NW | 14 | 1.5 | ------ | Cu. | ------ | |
| 16 | 57.80 | 27.7 | 33.4 | 22.8 | 81.3 | NW | 10.6 | 4.3 | ------ | S.-Cu. | ------ | |
| 17 | 58.24 | 28.5 | 34.6 | 24.2 | 78.3 | NW | 11.9 | 6.5 | ------ | S.-Cu. SE | ------ | |
| 18 | 58.02 | 28.1 | 34.7 | 22.7 | 77.3 | NW | 10 | 3.2 | Ci., A.-Cu. | Cu., S.-Cu. | ------ | |
| 19 | 58.83 | 28.6 | 34.8 | 24 | 78.3 | NW | 9.4 | 6.8 | Ci., A.-Cu. | S.-Cu. | ------ | ◯° a. ⚡ p. |
| 20 | 59.86 | 27.9 | 33.6 | 24.8 | 82 | Variable | 7.1 | 7.8 | A.-Cu. | S.-Cu. E | 6.1 | ⚡ p p. |
| 21 | 60.38 | 28.7 | 34.5 | 23.8 | 77.5 | Variable | 11.5 | 6.8 | Ci.-S., A.-Cu. | S.-Cu. | ------ | ⚡° ⊤° p. |
| 22 | 59.12 | 29.2 | 37.1 | 23.8 | 75.7 | SE, NW | 12.3 | 7 | A.-Cu. | S.-Cu. | ------ | ⚡ p. |
| 23 | 56.48 | 26.5 | 30.6 | 23.8 | 89.7 | NW | 7 | 9 | A.-Cu. | S.-Cu., N. | 4.1 | d p° p. |
| 24 | 56.72 | 24.9 | 31.7 | 22.8 | 93.2 | SE | 11 | 9.8 | A.-Cu. | S.-Cu., N. SE, S | 65.3 | ●² ⊤ p. |
| 25 | 58.68 | 26.1 | 30.4 | 22.5 | 90.2 | Variable | 8.2 | 7.8 | Ci., A.-Cu. | S.-Cu. SE | 3.3 | d° p° a. p. |
| 26 | 59.02 | 26.4 | 34.1 | 23.5 | 91.8 | S quad. | 6.3 | 7.2 | Ci., A.-Cu. | Fr.-Cu. SE | 21.7 | ⊤° a ⚡ ⌒² ☈ ● p. |
| 27 | 57.97 | 25 | 33 | 23.4 | 95.8 | SE | 6.4 | 10 | A.-Cu. | S.-Cu. SE | 56.3 | ⚡ ☈ p² ● p. |
| 28 | 57.56 | 26.7 | 31.3 | 22.7 | 86.8 | NW | 10.1 | 7.2 | A.-Cu. S | Cu., N. | ------ | ● a. ⚡ p. |
| 29 | 57.98 | 28.2 | 33.5 | 23.5 | 81.8 | S, NW | 10.2 | 3.3 | Ci. | Cu., S-Cu. | ------ | ⚡ p. |
| 30 | 58.51 | 28.4 | 32.9 | 24.4 | 81.8 | NW | 10.1 | 4.3 | Ci., Ci.-S. | Cu., S.-Cu. | ------ | ⚡ a. p. |
| Mean | 758.24 | 27.7 | 34.3 | 23.2 | 80.3 | ------ | 11.2 | 5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 186.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 7.5 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 758.37 | 26.6 | 34.4 | 21.1 | 75.2 | Variable | 3 | 3.8 | Ci. | Fr.-Cu. NW | ------ | Ω$^2$≡° a. ⊤ p. |
| 2 | 58.79 | 26.9 | 33 | 21.7 | 76.5 | N quad. | 2.8 | 5.3 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 3 | 59.05 | 27 | 34.4 | 22.6 | 72.5 | SE quad. | 2.8 | 9 | Ci.-S. | S.-Cu., Cu. | ------ | Ω° a. ⊤ p. |
| 4 | 58.96 | 28 | 35.5 | 22.9 | 72.8 | SE quad. | 2.3 | 9.8 | Ci.-S. | S.-Cu. | ------ | Ω a. ☈ d° p. |
| 5 | 58.76 | 28 | 33.4 | 24.1 | 70.8 | SSE | 3 | 10 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 6 | 58.68 | 28 | 35 | 22.4 | 69.5 | SSE, W | 3 | 3 | Ci. | S.-Cu., Cu. | ------ | |
| 7 | 58.28 | 27.8 | 35.2 | 22.9 | 65 | SSE | 3 | 4 | Ci.-S. | S.-Cu., Cu. | ------ | |
| 8 | 57.95 | 28 | 34.4 | 23.3 | 70.8 | SE quad. | 3 | 3.3 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 9 | 57.08 | 27.8 | 34.1 | 23.5 | 76.2 | SE quad. | 2 | 6.5 | A.-Cu. | S.-Cu. | ------ | Ω° a. ☇ p. |
| 10 | 56.84 | 28.4 | 34.8 | 23.6 | 74.2 | SE quad. | 2.5 | 5.7 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 11 | 56.95 | 28.3 | 33 | 24.1 | 78.2 | SSE, W | 2.7 | 6.7 | Ci.-S., Ci. | Cu. | ------ | Ω° ⊤ a. d ☇ p. |
| 12 | 57.66 | 28.5 | 32.1 | 25.7 | 78 | N quad. | 2.7 | 4.7 | Ci.-S. | Cu. | ------ | |
| 13 | 58.46 | 28.9 | 35.5 | 24 | 75.7 | SE quad. | 2.8 | 5.8 | Ci.-S. | Cu. | ------ | Ω° a. |
| 14 | 58.19 | 28.3 | 32.2 | 24.8 | 75 | N | 3.2 | 7.3 | Ci.-S. | S.-Cu. N | ------ | |
| 15 | 57.91 | 27.8 | 31.4 | 25.8 | 73.5 | N quad. | 2.8 | 7.5 | Ci.-S., Ci. | S.-Cu. NNW, NNE | ------ | |
| 16 | 57.94 | 27.9 | 32 | 23.1 | 72.2 | WNW | 2.7 | 5.8 | Ci.-S. | S.-Cu., Cu. | ------ | Ω° a. |
| 17 | 58.23 | 27.2 | 32.6 | 22.6 | 74.2 | S quad. | 2.3 | 6.2 | Ci.-S. | S.-Cu. NW | 0.3 | Ω° a. ●° p. |
| 18 | 58 | 26.8 | 32.1 | 22.4 | 79.8 | SSE | 2.3 | 9 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 19 | 59.06 | 27.7 | 33 | 23.1 | 78.2 | WNW | 2 | 9.8 | Ci.-S. | Cu. SE | ------ | Ω° a. ⊤ ☇ p. |
| 20 | 59.79 | 28.2 | 33.9 | 23.7 | 78.5 | NNE | 2.5 | 10 | Ci.-S. | S.-Cu. NNE | .3 | ●° a. ⊤ p. |
| 21 | 60.47 | 29.1 | 35.9 | 24.5 | 75.3 | N quad. | 2.7 | 9.3 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 22 | 59.03 | 28.7 | 35.6 | 24.6 | 76 | SE quad. | 2.3 | 10 | Ci.-S. | S.-Cu. | ------ | Ω° a. ◯$^2$ ☇ p. |
| 23 | 56.19 | 27.2 | 31.4 | 24.4 | 82.5 | Variable | 1.5 | 10 | Ci.-S. | S.-Cu. NE | .6 | Ω° a. pp. |
| 24 | 56.44 | 25.2 | 29.8 | 23.4 | 90.3 | S quad. | 3.5 | 10 | Ci.-S. | N.-cf. | 16.8 | p a. p. |
| 25 | 58.60 | 26.2 | 32.4 | 23.1 | 86 | S | 3.3 | 10 | Ci.-S. | Cu. SW | 3.2 | ●° ⊤ a. p a. p. |
| 26 | 58.88 | 27 | 32.1 | 23.9 | 84.7 | S | 2.3 | 10 | Ci.-S. | Cu.-N. | 41.2 | ⊤ ☈ ☇ p. ● a. p. |
| 27 | 57.74 | 25.6 | 31.9 | 23.3 | 90.5 | SE quad. | 1.5 | 10 | Ci.-S. | Cu.-N. | 37.4 | ● a. p. ⊤ ☈ p. |
| 28 | 57.59 | 26.4 | 31.1 | 22.2 | 84.8 | NW quad. | 1.8 | 9.2 | Ci.-S. | Cu. WNW | ------ | ●° a. |
| 29 | 58 | 27.3 | 31.7 | 23.4 | 80.5 | S, WNW | 2.2 | 7 | Ci.-S. | Fr.-Cu. WNW | ------ | Ω a. ☇ p. |
| 30 | 58.56 | 27.3 | 31.7 | 22.8 | 80 | NW quad. | 1.5 | 3.8 | Ci.-S. | Cu.-N. | ------ | Ω ≡° a. ☇ p. |
| Mean | 758.22 | 27.5 | 33.2 | 23.4 | 77.2 | ------------ | 2.5 | 7.4 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 99.8 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 636.11 | 18 | 24.4 | 13.5 | 72.7 | Variable | 13.5 | 1 | Ci. | Cu. | ------ | Ω$^2$≡° ∞ a. |
| 2 | 36.45 | 17.2 | 23.4 | 12.8 | 86.3 | E, W | 15.2 | 5.9 | Ci., A.-Cu. | Cu., Fr.-N. | ------ | Ω$^2$≡ a. ∞ a. p. |
| 3 | 36.93 | 18.8 | 24.8 | 13.9 | 68.5 | E, W | 15 | 7.4 | Ci. | Cu. | 0.8 | Ω a. |
| 4 | 37.08 | 17.9 | 23.4 | 15.5 | 86.5 | E | 18.2 | 9.4 | A.-Cu. | S.-Cu. E | 8.1 | d a. ⊤ p ● ≡ p. |
| 5 | 36.68 | 17.4 | 21.6 | 15.4 | 90.5 | E | 11.3 | 7.6 | Ci. | Cu.-N. ENE | ------ | Ω a. ≡$^2$ p. |
| 6 | 36.62 | 18.9 | 24.3 | 15 | 62.2 | E | 16 | 2.9 | Ci.-Cu. | Cu. | ------ | Ω° a. |
| 7 | 36.28 | 18.4 | 24.2 | 14.4 | 73.8 | E, W | 16 | 3 | Ci. | Cu. | ------ | Ω a. |
| 8 | 36.06 | 18.5 | 23.8 | 14.6 | 82 | E quad. | 16.9 | 4.6 | A.-Cu., Ci. | Cu. | ------ | Ω$^2$ a. |
| 9 | 35.56 | 19.2 | 25.2 | 14.8 | 84.5 | E | 17.7 | 7.7 | A.-Cu. | S.-Cu. SE, E | .3 | Ω$^2$ a. ≡ ⊤ p° p. |
| 10 | 35.43 | 18.9 | 25.2 | 16 | 88.7 | W, E | 13.6 | 6.4 | Ci. | Cu.-N. W | 13 | Ω a. d° ● ≡$^2$ p. |
| 11 | 35.44 | 18.9 | 24.3 | 15.9 | 90.3 | W | 13.9 | 7 | Ci. | Cu.-N. | ------ | Ω ≡° a. ≡ p. |
| 12 | 36.08 | 19.1 | 24.8 | 16 | 87.8 | E, W | 14.9 | 5.3 | Ci. | S.-Cu. SW | ------ | Ω$^2$ a. ≡$^2$ p. |
| 13 | 36.77 | 18.8 | 26.2 | 15.2 | 86.3 | E, W | 15.7 | 6.4 | ------------------ | Cu.-N. | ------ | Ω ≡ a. ≡° p° ☇ p. |
| 14 | 36.30 | 18.3 | 24.5 | 14.9 | 86.5 | W | 13.5 | 4.9 | Ci. | Cu. | ------ | Ω ≡° a. ≡$^2$ p. |
| 15 | 35.80 | 18.9 | 24.2 | 15 | 79.5 | E | 10.8 | 3 | Ci. | Cu. | ------ | Ω$^2$≡° a. ∞ a. p. |
| 16 | 35.97 | 17.9 | 22.8 | 15.5 | 88.3 | W quad. | 11.4 | 5.9 | Ci. | S.-Cu. WSW, SSW | ------ | Ω ∞ a. ≡ p. |
| 17 | 36.20 | 18 | 24.5 | 15 | 86.5 | E, W | 13.4 | 6.6 | A.-Cu. | Cu. S | ------ | Ω$^2$ ∞ ≡ a. |
| 18 | 36.14 | 17.9 | 23.9 | 14.7 | 86.7 | WSW | 12.4 | 6.1 | Ci., A.-Cu. | Cu. ENE | ------ | Ω° a. p° ≡° p. ∞ |
| 19 | 36.98 | 18.5 | 23.8 | 15.4 | 92.8 | W quad. | 12.9 | 9.9 | Ci., A.-S. | Cu., Fr.-N. | .8 | Ω a. ⊤ ☇ d p. ≡ |
| 20 | 38.01 | 18.2 | 23 | 16.5 | 95.5 | SW quad. | 10.7 | 9.7 | Variable | Fr.-N. EbyS | 28.7 | Ω a. ● p d p. ≡ |
| 21 | 38.75 | 19.4 | 24 | 16.4 | 83 | E, W | 15.1 | 9 | A.-Cu. W | Cu.-N. ENE | 1.5 | ● p. |
| 22 | 37.57 | 19.2 | 25.6 | 15.9 | 81.3 | E, SE | 14.2 | 8 | Ci.-Cu. | Cu. | .3 | ≡° p° d° p. |
| 23 | 34.80 | 18.7 | 23.8 | 15.7 | 78.3 | E quad. | 15.8 | 9.6 | A.-Cu. ENE | S.-Cu. EbyN | 1.8 | ≡ d p. |
| 24 | 34.62 | 16.9 | 21.3 | 14.6 | 96.5 | E quad. | 19.5 | 9.6 | Ci. | Fr.-N. SE | 46.7 | d° ≡ a. ≡$^2$ ●$^2$ ⊤ p. |
| 25 | 36.56 | 16.8 | 19.2 | 15.1 | 99.8 | W | 12.9 | 10 | ------------------ | Fr.-N. | 6.4 | ≡$^2$ d ● a. p. |
| 26 | 36.88 | 17.5 | 22.4 | 15.1 | 96.2 | W quad. | 10.5 | 7.9 | Ci.-Cu. SSW | Cu. | 47.3 | ≡ ●$^2$ ☈ p. |
| 27 | 35.56 | 16.8 | 22.5 | 15.5 | 96.5 | SE | 7.2 | 9.7 | Ci.-Cu., A.-S. | Fr.-N. SWbyW | 88.4 | ≡ ● a. ●$^2$ ☈$^2$ p. |
| 28 | 35.31 | 17.1 | 21.3 | 15.4 | 93.7 | WNW | 14.4 | 8.6 | Ci. | S.-Cu. NNW | 1 | ≡ d a. p. ●° p. |
| 29 | 36.10 | 17.8 | 23.7 | 14.2 | 95 | W quad. | 10.1 | 6.7 | Ci. | Cu. | .5 | Ω a. ☇ ⊤ d ≡ p. |
| 30 | 36.76 | 18.3 | 24.2 | 15.8 | 92.7 | W | 11.6 | 6.6 | Ci. | Cu. | .8 | Ω$^2$≡° a. ⊤ d ●° p. |
| Mean | 636.33 | 18.2 | 23.7 | 15.1 | 86.3 | ------------ | 13.8 | 6.9 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 246.4 | |

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[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0–10.* |  |  | *mm.* |  |
| 1 | 758.49 | 26.6 | 32 | 21.8 | 72.7 | Variable | 8.2 | 0.2 | Ci.-S. | Cu. | ------ | ≡° a. |
| 2 | 58.85 | 27.6 | 33.8 | 23 | 66.2 | Variable | 8.8 | .5 | Ci.-S., A.-Cu. | Cu. | ------ | ≡° a. |
| 3 | 59.22 | 27.7 | 31.9 | 23 | 63.3 | Variable | 10.9 | .3 | Ci.-S. | Cu. N | ------ |  |
| 4 | 59.07 | 28.6 | 33.5 | 24.5 | 57.5 | Variable | 9.8 | 1.8 | Ci. | Cu. | ------ | ⌈↯ p. |
| 5 | 58.88 | 26.6 | 34 | 22.8 | 70.2 | E | 10.1 | 1.7 | A.-Cu. | Cu. | 0.5 | ⌈↯° d p. |
| 6 | 58.97 | 27.3 | 33 | 22.6 | 70 | Variable | 9.7 | .7 | Ci.-S. | S.-Cu., Cu. | ------ |  |
| 7 | 58.46 | 27.2 | 32.6 | 23 | 71.5 | NW quad. | 7.9 | 1.8 | Ci.-S., A.-Cu. | Cu. | ------ | Ф p. |
| 8 | 58.21 | 27.5 | 33.5 | 22.8 | 74.7 | Variable | 9.5 | .5 | A.-Cu. | Cu. | ------ |  |
| 9 | 57.34 | 27.8 | 33.8 | 23.3 | 72.2 | N quad. | 10.3 | 2.3 | A.-Cu. | Cu. | ------ | ↯° p. |
| 10 | 56.98 | 28.2 | 32.6 | 24 | 73.2 | Variable | 7.5 | .3 | Ci.-S. | Cu. | ------ |  |
| 11 | 57.07 | 27.9 | 32.5 | 23.5 | 78 | Variable | 7.1 | 3 | A.-Cu. | Cu. N | 5.8 | d ● ⌒ ⌈↯ a. Ф p. |
| 12 | 57.70 | 27.8 | 33.6 | 22.8 | 76.3 | NW quad. | 9.1 | 0 | A.-Cu., Ci.-S. | Cu. | ------ | Ф Ω ≡° a. |
| 13 | 58.57 | 27.9 | 33.3 | 22.7 | 71.5 | Variable | 10.5 | 1.5 | Ci.-S. | Cu. | ------ |  |
| 14 | 58.33 | 27.2 | 31.9 | 22 | 74 | N quad. | 14.2 | 0 | Ci.-S. | Cu. | ------ | Ω° ≡° a. |
| 15 | 57.70 | 26.5 | 33 | 21.8 | 73.2 | N quad. | 7.8 | .2 | Ci.-S. | Cu. | ------ | Ф Ω° a. |
| 16 | 57.83 | 27.6 | 33.5 | 23 | 68 | Variable | 8 | 0 | Ci.-S. | Cu. | ------ |  |
| 17 | 58.23 | 27.6 | 32.8 | 24.2 | 71 | Variable | 7.7 | 5 | Ci.-S. | Cu. | ------ | Ф a. |
| 18 | 58 | 28.6 | 33.8 | 23.5 | 63.5 | NE quad. | 8.2 | 6.3 | A.-Cu., Ci.-S. | Cu.-N. ENE | ------ | Ф ≡° a. |
| 19 | 59.10 | 28.9 | 33.8 | 25.2 | 61.8 | Variable | 9.9 | 3.2 | Ci.-S. | Cu. | ------ | ↯° p. |
| 20 | 59.78 | 28.3 | 34 | 23 | 73.5 | Variable | 8.8 | 1.2 | Ci.-S. | S.-Cu., Cu. | ------ | Ф ≡° a. ⌈↯ p. |
| 21 | 60.61 | 29.4 | 35.5 | 26.4 | 71.2 | NW quad. | 10.4 | 3.3 | Ci.-S. | S.-Cu. | ------ | ≡$_{\circ}$ a. |
| 22 | 59.11 | 29.4 | 34.5 | 24.5 | 65.7 | Variable | 8.1 | 2.7 | Ci.-S. | Cu. | ------ |  |
| 23 | 55.95 | 29.6 | 38 | 23.2 | 66.5 | Variable | 10.1 | 6.2 | Ci.-S. | Cu. | ------ | Ω ≡° a. |
| 24 | 56.30 | 27.5 | 32.8 | 21.5 | 76.8 | S quad. | 14.6 | 7.2 | Ci.-S. | Cu. WSW | 12.9 | ≡° a. d ● p. |
| 25 | 58.59 | 26 | 29.8 | 28.3 | 87 | S quad. | 9.9 | 9.5 | Ci.-S. | Cu.-N. SSW, WSW | 4.3 | ● a. d° p. |
| 26 | 58.89 | 27.2 | 32 | 23.5 | 81.8 | Variable | 8.2 | 7.7 | A.-Cu. S | Cu. WSW | 3.3 | d ↯° p. |
| 27 | 57.64 | 26.9 | 31.3 | 22.5 | 82.1 | S quad. | 8.1 | 9.2 | Ci.-S., A.-Cu. | Cu. WSW | 78.5 | d a. p. ●$^{2}$ ↯° p. |
| 28 | 57.48 | 26.4 | 30.8 | 22.6 | 81.8 | S quad. | 6.7 | 3 | Ci.-S. | Cu. | ------ | d a. |
| 29 | 58.08 | 27.3 | 31.6 | 23 | 75.8 | Variable | 7.1 | 2.8 | Ci.-S., A.-Cu. | Cu. | ------ |  |
| 30 | 58.60 | 27.5 | 32.8 | 23.5 | 78 | Variable | 7.5 | .2 | Ci.-S. | Cu. | ------ | Ω$^{2}$ ≡° a. ↯° p. |
| Mean | 758.27 | 27.7 | 33.1 | 23.2 | 72.3 | ------------ | 9.2 | 2.7 | ------------------ | ------------------ | ------ |  |
| Total | -------- | ------ | ------ | ------ | ------- | ------------ | ---------- | ---------- | ------------------ | ------------------ | 105.3 |  |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *0–12.* | *0–10.* |  |  | *mm.* |  |
| 1 | 759.41 | 25.4 | 34.4 | 20 | 75 | SE, NW | 0.8 | 3.3 | Ci. | Cu. S | ------ | Ω$^{2}$ a. |
| 2 | 59.94 | 25.4 | 33.7 | 19.8 | 75.8 | SE, NW | .3 | 3.7 | Ci. | Cu. | ------ | Ω$^{2}$ a. |
| 3 | 60.98 | 25.1 | 33.2 | 19.1 | 76.8 | N, SW | .7 | 6 | Ci., Ci.-S. | Cu. E | 4.1 | Ω$^{2}$ a. ● p. |
| 4 | 60.89 | 24.6 | 32.7 | 22.2 | 90.5 | E | .2 | 9.5 | ------------------ | Cu.-N. | 26.7 | d a. ●$^{2}$ ⊤ p. |
| 5 | 59.94 | 26.8 | 32.6 | 22 | 79.3 | SE | .3 | 4.7 | ------------------ | Cu.-N. SE, S | ------ | Ω a. |
| 6 | 60.32 | 25 | 32.4 | 19 | 80.5 | S, SE | .3 | 4 | Ci.-Cu. | Cu. S, NE | ------ | Ω$^{2}$ a. |
| 7 | 59.96 | 24.5 | 32 | 19.5 | 79.2 | Calm | 0 | 5.5 | Ci. | Cu.-N. S | ------ | Ω$^{2}$ a. d p. |
| 8 | 58.91 | 27 | 34.6 | 20.2 | 73.7 | SE | .7 | 3.8 | ------------------ | Cu. | ------ | Ω$^{2}$ a. |
| 9 | 57.88 | 27.9 | 35.7 | 21.4 | 74.2 | SE | 1.2 | 5 | A.-Cu. SW | Cu., Cu.-N. SW | 14.9 | Ω a. d ⊤ ● ⌈↯ p. |
| 10 | 57.51 | 26.5 | 36.3 | 22.5 | 86.5 | S quad. | .8 | 6 | ------------------ | Cu. S | 38.9 | ●° a. ●$^{2}$ ⌈↯$^{2}$ p. |
| 11 | 56.97 | 26.4 | 35.5 | 20 | 83.2 | N | .3 | 2.5 | Ci., Ci.-S. | Cu. WSW | 14 | ⌈↯$^{2}$ ●$^{2}$ ↙ ⌒$^{2}$ ↯ p. |
| 12 | 58.10 | 27.4 | 35.2 | 22.8 | 78.5 | Variable | .5 | 4.2 | ------------------ | Cu. S | ------ | ⌈↯° p. |
| 13 | 59.01 | 27.6 | 35.3 | 22.3 | 80.2 | Variable | .5 | 5.2 | Ci.-S. | S.-Cu., N. SW, NW | 23.6 | ●$^{2}$ ⌈↯$^{2}$ ↙$^{2}$ p. |
| 14 | 58.30 | 25.9 | 31.7 | 22.3 | 83.8 | Variable | .7 | 4.5 | ------------------ | Cu., Fr.-Cu. S, NE | ------ | ≡° a. ∞ p. |
| 15 | 58.10 | 26 | 31 | 22.6 | 80.2 | NW | .8 | 6.2 | ------------------ | Cu. | ------ | Ω$^{2}$ a. ∞ p. |
| 16 | 58.39 | 26.4 | 31 | 23.4 | 78.7 | NNW, NE | .3 | 7.2 | ------------------ | Cu.-N. S | ------ | Ω d a. |
| 17 | 58.14 | 26.5 | 32.8 | 22.9 | 81.8 | SE, NW | .5 | 5.8 | ------------------ | Cu.-N., Cu. W, S | 5.8 | Ω a. ● ⌈↯ p. |
| 18 | 59.44 | 24.6 | 27.5 | 21.8 | 84.7 | NW | 1.7 | 7.8 | Ci.-S. | Cu.-N. N | ------ | d p. |
| 19 | 60.08 | 25.3 | 30.8 | 21.5 | 85.3 | NW, N | .7 | 7.7 | Ci. | Cu.-N. NE | ------ | d p. |
| 20 | 60.88 | 27 | 31.8 | 24.4 | 84.7 | Variable | .5 | 6.5 | Ci. | Cu.-N. S, SE | 7.6 | ● ⌈↯ a. |
| 21 | 61.74 | 27.1 | 33.4 | 23.2 | 82.3 | N | .2 | 6.5 | Variable | Cu.-N. SE | ------ | d a. |
| 22 | 60.64 | 27.3 | 32.3 | 23.1 | 80.5 | SE, NE | .3 | 6.2 | Variable | Cu. E | ------ | Ω a. |
| 23 | 57.91 | 26.1 | 29.4 | 22.8 | 84.2 | N, SE | .3 | 7.7 | Ci. | S.-Cu., Cu.-N. E | 6.9 | Ω a. d ● p. |
| 24 | 56.29 | 27.3 | 33 | 23.4 | 82.5 | S quad. | 1.3 | 8.7 | Ci. | Cu., N. S | ------ | ⌈↯° ↙° d p. |
| 25 | 57.97 | 27.2 | 32.7 | 24 | 83.7 | Calm | 0 | 7.5 | Ci.-S. | Cu.-N. | ------ | Ω a. ⌈↯° p. ◯$^{2}$ a. p. |
| 26 | 58.48 | 27.2 | 33.4 | 24.9 | 82.8 | Variable | .7 | 7.5 | ------------------ | Cu.-N. S, WSW | 16.8 | ⌈↯ d ● p. |
| 27 | 57.82 | 25.6 | 29.2 | 23 | 87.7 | NW | .8 | 10 | Ci.-S. | N. SE, SW | 18 | ● ⌈↯ a. ● ↯ p. |
| 28 | 57.09 | 25.7 | 31.5 | 21.8 | 83 | NE | .5 | 4.8 | A.-Cu. NE | Cu. N, NE | 6.6 | ● a. p. ⌈↯ p. |
| 29 | 58.16 | 26.9 | 32.5 | 22 | 80.2 | SE, NW | .5 | 6.7 | Ci.-Cu. | Cu., Cu.-N. N | ------ | ↯ p. |
| 30 | 58.57 | 27.6 | 33.5 | 23.1 | 81.3 | S, NW | .3 | 5 | A.-Cu. | S.-Cu. S | ------ | ◯$^{2}$ a. |
| Mean | 758.93 | 26.3 | 32.7 | 22 | 81.4 | ------------ | .6 | 6 | ------------------ | ------------------ | ------ |  |
| Total | -------- | ------ | ------ | ------ | ------- | ------------ | ---------- | ---------- | ------------------ | ------------------ | 183.9 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, −1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Perct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 760.07 | 24.5 | 29.8 | 19.4 | 77 | E, NE | 16.9 | 0.2 | ------ | Cu. | ------ | Ω ≡° a. |
| 2 | 60.58 | 25.1 | 29.4 | 20 | 72.2 | E | 17.5 | .5 | Ci. | Cu.-N. | ------ | Ω ≡° a. |
| 3 | 61.78 | 24.7 | 29.5 | 19.2 | 77.8 | E | 14.5 | 5.5 | Ci. S | Cu.-N., S.-Cu. | ------ | Ω ≡° a. |
| 4 | 61.23 | 24.6 | 28.7 | 22.2 | 85.2 | E | 9.3 | 8 | Ci.-S. | S.-Cu. SE | 5.1 | ● p. |
| 5 | 60.20 | 25.3 | 30.8 | 21.5 | 78.3 | SE, E | 11.5 | 2.2 | Ci.-S. SW | Cu.-N. SE | ------ | |
| 6 | 60.70 | 24.9 | 29.9 | 21.4 | 78 | E | 12.6 | .5 | ------ | Cu.-N. S | ------ | Ω ≡° a. |
| 7 | 60.40 | 23.8 | 29.7 | 19.9 | 79.3 | E | 9.9 | 4.2 | A.-Cu. | Cu.-N., N. SE | .3 | Ω ≡° ●° a. |
| 8 | 59.10 | 25 | 31.1 | 18.8 | 77.3 | E | 11.8 | 1.8 | Ci.-S. W | S.-Cu. | ------ | Ω ≡° a. |
| 9 | 58.08 | 25.4 | 31.5 | 21.6 | 82.5 | Variable | 14.3 | 3.3 | A.-Cu. W | Cu.-N., S.-Cu. | 12.5 | Ω ≡° a. Γ↯ ● ⌒ p. |
| 10 | 57.41 | 25.3 | 31.7 | 21.1 | 85 | S, NE | 16.2 | .3 | ------ | Cu.-N., S.-Cu. | ------ | Γ↯ ⌒ ↯ p. |
| 11 | 57.34 | 25.9 | 31.7 | 21.9 | 80.5 | NE quad. | 9.2 | 2.7 | A.-Cu. SW | S.-Cu. | ------ | Ω ≡° a. Γ↯ ● ↯ p. |
| 12 | 58.45 | 25.9 | 30.9 | 21.6 | 83 | N, NE | 11.1 | 1.7 | ------ | S.-Cu. SW | ----- | ∞ a. ⊤ p. |
| 13 | 59.19 | 26.1 | 33.5 | 21.6 | 81 | Variable | 11.4 | 1.7 | Ci.-S. W | S.-Cu. W | .5 | Ω ≡° a. ⊤ Γ↯ ● p. |
| 14 | 58.88 | 25.7 | 30.2 | 21.6 | 82.2 | W, N | 12.2 | 3 | ------ | Cu.-N. NW, SW | ------ | Ω a. ∞ a. p. |
| 15 | 58.82 | 25.9 | 29.5 | 22.1 | 74.7 | NE, N | 13.9 | 6.7 | A.-Cu. SW | Cu.-N. E | ------ | ∞ a. p. |
| 16 | 58.88 | 25.7 | 28.5 | 24.4 | 76.2 | E | 19.6 | 10 | Ci.-S. | S.-Cu. SW | ------ | ∞ p. |
| 17 | 58.75 | 26 | 30.7 | 22.1 | 80.5 | E, NE | 12.2 | 4 | A.-Cu. SE | Cu.-N. S | 20.3 | Ω ∞ a. ∞ Γ↯ ●° p. |
| 18 | 60.47 | 23 | 25.3 | 21.3 | 86.3 | NE | 28.8 | 10 | ------ | Cu.-N. NE | 1.9 | ● a. ●° p. |
| 19 | 60.66 | 24.9 | 28.9 | 21 | 85.5 | E | 13.5 | 9.3 | ------ | Cu.-N., S.-Cu. SE | ------ | ↯ p. |
| 20 | 61.22 | 26.1 | 30.4 | 23.5 | 88.8 | E | 7.5 | 5 | A.-Cu. SE | S.-Cu. E | ------ | Ω a. ⊤° p. |
| 21 | 62.18 | 26.5 | 30.6 | 22.4 | 82.8 | E | 13.9 | 6.7 | A.-Cu. E, SE | S.-Cu. | ------ | Ω a. |
| 22 | 61.14 | 26.1 | ------ | 22.6 | 81.5 | E | 13.8 | 4.3 | Ci. SE | Cu.-N. E | .5 | Ω ≡° a. ●° ⌒ p. |
| 23 | 58.45 | 26.1 | ------ | 22.5 | 83.2 | E | 13.2 | 8.2 | Ci.-S. SE | S.-Cu. S | 3.8 | Ω ≡° a. ●° p. |
| 24 | 56.33 | 26.7 | ------ | 22.5 | 82.8 | SE, E | 13.7 | 4.2 | Ci.-S. W | Cu.-N. S | 22.6 | ⊤ Γ↯ ● p. |
| 25 | 58.32 | 25.9 | ------ | 22.7 | 86.8 | SW, NE | 8.2 | 6.3 | Ci.-S. | S.-Cu. SW | 20.1 | ● ⊤ ↯ p. |
| 26 | 58.90 | 26.7 | ------ | 23.9 | 84.7 | NE, N | 10.8 | 7.2 | Variable SW, W | Cu.-N., S.-Cu., SW, W | 26.6 | ↯ a. p. ⊤ ● p. |
| 27 | 57.81 | 25.3 | ------ | 22.9 | 88.2 | NE quad. | 8.5 | 9 | A.-Cu. SW | S.-Cu., N. SW | 6.4 | ● a. p. |
| 28 | 57.43 | 25.7 | ------ | 22.1 | 84.5 | SE, N | 12.5 | 6 | Ci. SW | Cu.-N. NW | 9.7 | ⊤ p. |
| 29 | 58.66 | 26.3 | ------ | 22.9 | 82.5 | NE | 12 | 4.8 | A.-Cu. SW | Cu.-N. ENE | 4.3 | ● a. ⊤ p. |
| 30 | 59.14 | 27 | ------ | 23.5 | 80.8 | E, NE | 12.5 | .3 | Ci.-S. | Cu.-N., S.-Cu. | ------ | ↯ p. |
| Mean | 759.35 | 25.5 | 30.1 | 21.8 | 81.6 | ------ | 13.1 | 4.6 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 134.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.5 | 24.4 | 88 | 75 | 4 | 8 | ------ | |
| 2 | 33.5 | 23.7 | 96 | 83 | 5 | 9 | 38.9 | ⊤ ● ↯ p. |
| 3 | 31.6 | 22.4 | 92 | 84 | 10 | 10 | 33 | ●² a. d° a. p. ● p. |
| 4 | ------ | 22 | 98 | 97 | 8 | 9 | 59.1 | ●² d a. p. ⊤ ● p. |
| 5 | 32.4 | 21.1 | 97 | 72 | 7 | 7 | .2 | ●° a. |
| 6 | 32.6 | 21.5 | 98 | 75 | 5 | 8 | ------ | ≡ a. |
| 7 | 30.4 | 22.6 | 95 | 96 | 1 | 9 | 44.5 | Ω° ● d a. ●² ⊤ p. |
| 8 | 32.4 | 22.3 | 98 | 76 | 0 | 5 | 1.8 | Ω d° a. d ● p. |
| 9 | 31.2 | 22 | 95 | 78 | 1 | 8 | 1.9 | Ω° ● a. d² ● p. |
| 10 | 32.5 | 21.3 | 96 | 72 | 0 | 4 | .4 | ● a. p. d p. |
| 11 | 32.7 | 22.1 | 97 | 73 | 1 | 8 | ------ | d° p. |
| 12 | 32.6 | 22.7 | 96 | 74 | 2 | 9 | ------ | |
| 13 | 33 | 22.5 | 96 | 72 | 3 | 6 | ------ | |
| 14 | 33.6 | 23.3 | 96 | 74 | 1 | 7 | ------ | d° a. |
| 15 | 33 | 23.7 | 96 | 72 | 10 | 8 | ------ | ≡° Ω° d° a. ⊤ d° p. |
| 16 | 33 | 23.2 | 97 | 76 | 4 | 9 | ------ | ≡ Ω° a. ↯ p. |
| 17 | 33.4 | 22.9 | 96 | 71 | 3 | 3 | ------ | ≡° a. |
| 18 | 33 | 21.4 | 97 | 71 | 2 | 3 | ------ | ≡ a. |
| 19 | 33.6 | 22 | 97 | 72 | 10 | 8 | ------ | ≡ a. |
| 20 | 33.5 | 22.4 | 96 | 71 | 3 | 7 | ------ | ≡° a. ⊤ p. |
| 21 | 30.7 | 23.3 | 90 | 75 | 10 | 9 | 1.3 | ● a. d° p. |
| 22 | 32.3 | 21.9 | 97 | 73 | 8 | 9 | ------ | ≡ a. |
| 23 | 33.7 | 22.3 | 96 | 71 | 3 | 4 | ------ | Ω° a. ↯ p. |
| 24 | 34 | 21.8 | 93 | 70 | 1 | 7 | ------ | Ω° a. ↯ p. |
| 25 | 32.4 | 22.5 | 97 | 83 | 5 | 8 | .5 | ● ⊤ a. ●° d° p. |
| 26 | 34.1 | 23.6 | 92 | 76 | 7 | 4 | ------ | ⊤ a. |
| 27 | 33 | 22.3 | 94 | 89 | 3 | 9 | 2.2 | ● ⊤ d° p. |
| 28 | 31 | 20.8 | 96 | 79 | 2 | 6 | .1 | Ω ≡° d ● a. d p. |
| 29 | 33 | 21.2 | 98 | 71 | 0 | 2 | ------ | ≡ Ω² a. |
| 30 | 33.9 | 22.1 | 96 | 73 | 3 | 8 | ------ | Ω a. ↯ p. |
| Mean | 32.7 | 22.4 | 95.5 | 76.5 | 4.1 | 7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 183.9 | |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.8 | 22 | 87 | 71 | 9 | 10 | ------ | Ω a. ⊤ p° p. |
| 2 | 31.5 | 22 | 94 | 73 | 9 | 8 | 11 | Ω ●° a. ● p. |
| 3 | 27.8 | 22.5 | ------ | 89 | 10 | 10 | 11.4 | ● a. p° p. |
| 4 | 28.8 | 23 | 97 | 97 | 10 | 10 | 15.7 | p° a. ● p. |
| 5 | 30.3 | 22 | 98 | 73 | 10 | 10 | ------ | ●° a. p° p. |
| 6 | 29.8 | 22 | 98 | 71 | 10 | 10 | ------ | Ω a. ⊤ p. |
| 7 | 32.1 | 22.5 | ------ | 71 | 10 | 10 | ------ | Ω a. |
| 8 | 30.8 | 22 | 96 | 93 | 2 | 10 | 7.6 | Ω ● a. |
| 9 | 30.7 | 22.8 | 96 | 82 | 9 | 10 | 27.5 | Ω a. p a. p. |
| 10 | 30.3 | 22 | 96 | 78 | 10 | 9 | ------ | ● d a. ⊤ p. |
| 11 | 29.3 | 23.8 | 98 | 90 | 9 | 10 | .8 | Ω a. p° ⊤ p. |
| 12 | 31.7 | 22.2 | 93 | 75 | 10 | 10 | 3.0? | ●° a. ⌣ p. |
| 13 | 33.3 | 22.5 | 96 | 67 | 10 | 4 | ------ | Ω a. ↯ p. |
| 14 | 31.8 | 22.8 | 91 | 71 | 10 | 6 | 1 | Ω a. ↯ ●° p. |
| 15 | 31.3 | 23 | 93 | 96 | 10 | 10 | 59.7 | Ω a. ● ⛈ p. |
| 16 | 31.5 | 23 | 96 | 60 | 10 | 10 | ------ | Ω a. ↯ p. |
| 17 | 30.3 | 22.5 | 91 | 79 | 10 | 3 | ------ | Ω ⊤ a. |
| 18 | 29.8 | 22 | 91 | 70 | 1 | 4 | ------ | Ω a. |
| 19 | 30.3 | 22.6 | 97 | 80 | 10 | 10 | ------ | Ω² a. |
| 20 | 30.3 | 23 | 93 | 77 | 10 | 10 | 6.6 | Ω a. ●° p. |
| 21 | 29.8 | 23 | 93 | 73 | 10 | 10 | 22.9 | Ω a. ⊤ a. p. ● p. |
| 22 | 29.3 | 22 | 96 | 95 | 10 | 10 | 6.3 | Ω a. ● a. p. |
| 23 | 29.8 | 23 | 97 | 67 | 10 | 6 | ------ | d a. |
| 24 | 31.3 | 21.5 | 89 | 66 | 2 | 3 | ------ | Ω a. |
| 25 | 30.8 | 22 | 97 | 69 | 1 | 8 | ------ | Ω a. |
| 26 | 31.3 | 22.5 | 94 | 75 | 2 | 9 | ------ | Ω ⊤ a. |
| 27 | 31.8 | 22 | 96 | 57 | 0 | 4 | ------ | Ω a. ⊤ a. p. |
| 28 | 30.3 | 22.5 | 92 | 76 | 3 | 8 | ------ | Ω a. |
| 29 | 30.3 | 22.5 | 96 | 68 | 0 | 3 | ------ | Ω a. |
| 30 | 30.5 | 23 | 95 | 75 | 0 | 10 | ------ | Ω a. |
| Mean | 30.7 | 22.5 | 94.5 | 76.1 | 7.2 | 8.2 | 173.5? | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.6 | 23 | 88 | 76 | 10 | 9 | ------ | ⛈ p. |
| 2 | 31.1 | 22.6 | 90 | 76 | 9 | 9 | 4.1 | ● a. |
| 3 | 28.5 | 23.5 | 97 | 76 | 10 | 10 | 11.2 | d ● a. |
| 4 | 31 | 22.9 | 91 | 76 | 7 | 8 | ------ | ⛈ p. |
| 5 | 29.8 | 22.5 | 89 | 72 | 4 | 8 | ------ | Ω a. |
| 6 | 30 | 23 | 87 | 68 | 9 | 9 | .5 | ● p. |
| 7 | 31.9 | 23 | 92 | 62 | 4 | 9 | ------ | |
| 8 | 31.7 | 23 | 91 | 77 | 5 | 9 | ------ | ⛈ p. |
| 9 | 31.5 | 23.9 | 86 | 71 | 3 | 5 | ------ | |
| 10 | 29.6 | 23.4 | 88 | 83 | 1 | 6 | ------ | |
| 11 | 31 | 24.4 | 87 | 84 | 10 | 10 | 16.5 | ● a. |
| 12 | 31.4 | 23.4 | 91 | 82 | 10 | 10 | ------ | ⊤ p. |
| 13 | 32.1 | 23.5 | 85 | 58 | 8 | 8 | ------ | ⊤ a. |
| 14 | 30 | 23 | 83 | 77 | 9 | 10 | ------ | |
| 15 | 30.6 | 24.3 | 88 | 72 | 9 | 9 | ------ | ⊤ a. |
| 16 | 29.5 | 22.9 | 90 | 68 | 8 | 10 | ------ | d ⊤ a. ●° p. |
| 17 | 30 | 23.8 | 87 | 75 | 9 | 10 | ------ | d p. |
| 18 | 30.6 | 22 | 91 | 71 | 4 | 7 | ------ | |
| 19 | 29.4 | 22.1 | 82 | 79 | 10 | 9 | ------ | ∞ p. |
| 20 | 29.5 | 23.5 | 82 | 80 | 9 | 9 | 1.8 | ● p. |
| 21 | 29.6 | 22.5 | 90 | 68 | 3 | 9 | .8 | ◯ a. p p. |
| 22 | 29.2 | 22.6 | 86 | 77 | 9 | 9 | ------ | d p. |
| 23 | 29.5 | 23.4 | 90 | 76 | 8 | 8 | ------ | |
| 24 | 31.5 | 22.8 | 88 | 71 | 2 | 2 | ------ | |
| 25 | 30.2 | 23.3 | 90 | 70 | 9 | 8 | ------ | |
| 26 | 31 | 23.3 | 91 | 72 | 9 | 9 | ------ | d p. |
| 27 | 31.1 | 23.5 | 90 | 75 | 7 | 7 | ------ | |
| 28 | 30 | 22.9 | 90 | 78 | 4 | 2 | ------ | |
| 29 | 31 | 22.7 | 80 | 72 | 7 | 2 | ------ | |
| 30 | 30.1 | 22.8 | 82 | 79 | 8 | 9 | ------ | |
| Mean | 30.5 | 23.1 | 88.1 | 74 | 7.1 | 8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 34.9 | |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.7 | 22.1 | 96 | 66 | 6 | 5 | ------ | |
| 2 | 32.6 | 22.1 | 96 | 69 | 7 | 5 | ------ | ⛈ p. |
| 3 | 32.1 | 22 | 96 | 65 | 5 | 5 | 13 | ● p. |
| 4 | 32.7 | 21.5 | 96 | 69 | 5 | 6 | ------ | |
| 5 | 33.7 | 22 | 96 | 66 | 5 | 7 | 8.4 | ● ⛈ p. |
| 6 | 32.2 | 21.8 | 97 | 66 | 5 | 6 | 10.7 | ● p. |
| 7 | 31.7 | 22.5 | 99 | 66 | 5 | 6 | ------ | ⛈ p. |
| 8 | 31.7 | 22.6 | 97 | 70 | 5 | 5 | ------ | |
| 9 | 31.8 | 22.9 | 95 | 69 | 6 | 5 | 33 | ⊤ ●² p. |
| 10 | 31.9 | 24.2 | 98 | 69 | 5 | 6 | 14.2 | ⊤ ●² p. |
| 11 | 33.2 | 23.8 | 96 | 58 | 5 | 5 | ------ | |
| 12 | 34.6 | 23 | 96 | 59 | 6 | 5 | ------ | ⛈ p. |
| 13 | 34.7 | 22.3 | 97 | 55 | 6 | 5 | ------ | |
| 14 | 30.8 | 23.1 | 97 | 68 | 6 | 7 | 23.1 | ● ⊤ p. |
| 15 | 33.2 | 22.1 | 97 | 61 | 7 | 6 | ------ | |
| 16 | 32.7 | 21.7 | 96 | 65 | 7 | 6 | 23.6 | ●² p. |
| 17 | 31.1 | 22.1 | 97 | 68 | 5 | 5 | ------ | |
| 18 | 34.2 | 22 | 95 | 60 | 5 | 6 | 10.9 | ⊤² ↯ ● p. |
| 19 | 29.2 | 21.7 | 97 | 74 | 7 | 8 | ------ | |
| 20 | 31 | 22.5 | 97 | 74 | 5 | 6 | ------ | |
| 21 | 27.7 | 22.1 | 91 | 80 | 5 | 9 | ------ | |
| 22 | 29.9 | 22.1 | 96 | 77 | 8 | 9 | 8.6 | ● p. |
| 23 | 31.7 | 21.5 | 96 | 57 | 5 | 6 | ------ | |
| 24 | 32.3 | 22.1 | 96 | 64 | 5 | 5 | ------ | |
| 25 | 32.5 | 23.1 | 97 | 64 | 6 | 5 | ------ | ⛈ a. |
| 26 | 33.1 | 23.3 | 97 | 58 | 7 | 5 | ------ | ⊤ a. |
| 27 | 32.7 | 22.5 | 97 | 62 | 6 | 5 | 20.6 | ⊤² ↯ ● p. |
| 28 | 32.1 | 22.3 | 98 | 61 | 6 | 5 | 13.5 | ● p. |
| 29 | 32.1 | 22.8 | 99 | 70 | 6 | 6 | 18.8 | ● ⛈ p. |
| 30 | 31.4 | 23.5 | 97 | 63 | 5 | 6 | ------ | |
| Mean | 32.1 | 22.4 | 96.5 | 65.8 | 5.7 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 198.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### COTABATO.

[$\phi$=7° 13′ N; $\lambda$=124° 15′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33 | 22.5 | 94 | 70 | 9 | 9 | 2 | Ω² a. ●° ⌈↘ p. |
| 2 | 33.2 | 22.2 | 91 | 66 | 5 | 7 | 49.5 | Ω a. ⌈↘ ●² p. |
| 3 | 33.5 | 23 | 95 | 52 | 3 | 6 | 4.3 | Ω² ⌈↘ ● ↯ p. |
| 4 | 33 | 23.5 | 86 | 67 | 5 | 3 | ------ | Ω° a. ⌈↘ d p. |
| 5 | 33 | 23.1 | 96 | 63 | 7 | 4 | 16 | Ω ∞ a. ⌈↘ ● p. |
| 6 | 31.6 | 23.4 | 97 | 68 | 9 | 7 | ------ | Ω² ≡° a. ∞ p. |
| 7 | 32.9 | 23.9 | 94 | 67 | 6 | 4 | 1.3 | Ω² a. ⌈↘ ↯ p p. |
| 8 | 32 | 23.7 | 92 | 75 | 10 | 9 | .8 | Ω² ⌈↘ d a. ↯² p. |
| 9 | 32.9 | 23 | 95 | 65 | 4 | 3 | 51.3 | Ω² ≡° a. ⌈↘ ⩛ ●² p. |
| 10 | 32.6 | 23.6 | 96 | 78 | 9 | 8 | 9.1 | Ω² a. ⌈↘ ● p. |
| 11 | 32.6 | 23.1 | 96 | 72 | 5 | 9 | 15.7 | Ω² a. ⌈↘ ● p. |
| 12 | 31.9 | 24 | 95 | 69 | 9 | 7 | ------ | Ω² ≡° ◯ a. ↯° p. |
| 13 | 34.1 | 23.5 | 91 | 60 | 2 | 4 | ------ | Ω² a. ⌈↘ p. |
| 14 | 34.3 | 24.5 | 95 | 88 | 6 | 8 | 55.6 | Ω² a. ⌈↘° ●² p. |
| 15 | 31.8 | 23.6 | 97 | 67 | 4 | 5 | 25.4 | Ω² a. ● ⌈↘ p. |
| 16 | 31.6 | 23.8 | 97 | 72 | 7 | 10 | 5.6 | Ω² a. ⊤ ↯ ● p. |
| 17 | 29.6 | 23.1 | 95 | 72 | 8 | 10 | ------ | Ω² a. ∞ ⌈↘ p. |
| 18 | 32.7 | 24.3 | 95 | 65 | 9 | 7 | ------ | Ω² a. ↯ p. |
| 19 | 31.2 | 24 | 91 | 74 | 10 | 10 | 22.9 | Ω² ∞° a. ● ⌈↘ p. |
| 20 | 32 | 21.9 | 94 | 70 | 10 | 10 | .8 | Ω a. d ↯ p. |
| 21 | 30 | 22.3 | 95 | 71 | 10 | 10 | .3 | Ω² a. d ↯ p. |
| 22 | 31.4 | 23 | 95 | 72 | 8 | 7 | 8.1 | Ω² a. ⌈↘ ●° p. |
| 23 | 30.8 | 22.4 | 95 | 73 | 5 | 4 | 5.3 | Ω³ d° ●° a. ◯ ↯ p. |
| 24 | 32.5 | 22 | 94 | 66 | 2 | 4 | ------ | Ω a. ↯ p. |
| 25 | 31.9 | 23.1 | 94 | 64 | 4 | 4 | ------ | Ω² a. ↯ p. |
| 26 | 32.6 | 22.8 | 95 | 67 | 3 | 4 | ------ | Ω a. ↯ p. |
| 27 | 32.9 | 22.6 | 92 | 63 | 2 | 3 | ------ | Ω° a. ⊤ ↯ p. |
| 28 | 33 | 23.5 | 91 | 60 | 2 | 3 | ------ | Ω° a. ⌈↘ d p. |
| 29 | 33.2 | 23.1 | 95 | 58 | 2 | 3 | ------ | Ω² a. ⌈↘ p. |
| 30 | 32.9 | 23.7 | 94 | 66 | 6 | 4 | .3 | Ω ≡° a. ⌈↘ p. |
| Mean | 32.4 | 23.2 | 94.1 | 68 | 6 | 6.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 274.3 | |

### DAPITAN.

[$\phi$=8° 40′ N; $\lambda$=123° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 22.7 | 89 | 71 | 9 | 8 | 2.8 | ◯ ⊕ p. |
| 2 | 31.6 | 23.7 | 90 | 75 | 9 | 6 | 5.8 | ● a. ↯ p. |
| 3 | 29.3 | 22.5 | 93 | 84 | 10 | 9 | 31.3 | ● ⌈↘ a. ↯ p. |
| 4 | 30.1 | 22.4 | 90 | 78 | 9 | 3 | ------ | ● a. ⩛ ↯ p. |
| 5 | 30.3 | 22.2 | 91 | 76 | 9 | 7 | 3.8 | ● a. ⩛ ⏀ p. |
| 6 | 30.2 | 23.3 | 91 | 75 | 10 | 6 | .5 | ● a. |
| 7 | 30 | 23.1 | 90 | 75 | 8 | 9 | 2 | ● a. ⩛ ↯ p. |
| 8 | 31.1 | 23 | 93 | 71 | 10 | 7 | 7.1 | ● a. ⊤ ⩛ p. |
| 9 | 31.5 | 23.4 | 94 | 71 | 10 | 5 | 2.8 | ● ⌈↘ a. ⩛ ↯ p. |
| 10 | 31.1 | 23.2 | 92 | 71 | 10 | 4 | ------ | ● a. ◯ ↯ ⩛ p. |
| 11 | 30 ? | 23.2 | 92 | 71 | 10 | 6 | .5 | ⊤ ● a. ⩛ p. |
| 12 | 30.3 | 22.9 | 91 | 72 | 10 | 7 | 1 | ● a. ⩛ ⏀ ↯ p. |
| 13 | 31.2 | 23.1 | 90 | 72 | 7 | 5 | 30.7 | Ω a. ⩛ ⏀ ↯ p. |
| 14 | 31.3 | 23.3 | 88 | 70 | 10 | 4 | .8 | ● a. ⩛ ↯ p. |
| 15 | 31.6 | 23.9 | 90 | 70 | 10 | 6 | 1.5 | ● a. ⩛ ⏀ ↯ p. |
| 16 | 31.5 | 23.4 | 89 | 70 | 8 | 5 | ------ | Ω a. |
| 17 | 31.2 | 22.7 | 89 | 70 | 9 | 7 | ------ | Ω a. |
| 18 | 31 | 22.5 | 94 | 72 | 7 | 4 | ------ | Ω a. ◯ ↯ p. |
| 19 | 31.1 | 22.8 | 94 | 71 | 9 | 10 | ------ | Ω a. ◯ ⊤ ↯ p. |
| 20 | 31.3 | 22.6 | 94 | 71 | 10 | 9 | ------ | Ω ⊤ a. ↯ p. |
| 21 | 27.2 | 22.8 | 91 | 89 | 10 | 10 | 4.8 | ● a. p. |
| 22 | 30 | 22.3 | 95 | 72 | 10 | 9 | 1.3 | ● a. ◯ ●° p. |
| 23 | 30.3 | 22.2 | 96 | 72 | 8 | 8 | .5 | ⊤ a. ● p. |
| 24 | 30.1 | 22 | 96 | 73 | 8 | 10 | .5 | Ω a. ⊤ ● ↯ p. |
| 25 | 31.3 | 22.5 | 91 | 72 | 8 | 6 | ------ | Ω a. ↯ p. |
| 26 | 31.4 | 22.3 | 91 | 70 | 7 | 5 | ------ | Ω a. ↯ p. |
| 27 | 31 | 22.5 | 92 | 72 | 8 | 4 | ------ | Ω a. ⌈↘ p. |
| 28 | 31.2 | 22.3 | 91 | 72 | 5 | 7 | ------ | Ω a. ↯ p. |
| 29 | 31.4 | 23.4 | 92 | 70 | 8 | 5 | ------ | Ω a. ↯ p. |
| 30 | 31.3 | 23.2 | 88 | 70 | 5 | 7 | ------ | Ω a. ↯ p. |
| Mean | 30.7 | 22.8 | 91.6 | 72.9 | 8.7 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 97.7 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.8 | 22.6 | 97 | 74 | 5 | 7 | ------ | Ω² a. ⌈↘ p. |
| 2 | 30.1 | 22.3 | 96 | 85 | 5 | 7 | 0.8 | Ω a. ⌈↘° ●° p. |
| 3 | 30.5 | 22.9 | 91 | 90 | 6 | 9 | 22.1 | Ω a. ● a. p. ⊤ p. |
| 4 | 29.8 | 23 | 95 | 76 | 8 | 9 | 2.3 | d a. ● a. p. ↯ p. |
| 5 | 28.7 | 23.2 | 94 | 80 | 8 | 8 | ------ | ● a. ↯ p. |
| 6 | 28.6 | 23.9 | 96 | 73 | 9 | 9 | ------ | Ω ◯² a. ↯ p. |
| 7 | 29.7 | 23.2 | 95 | 72 | 10 | 7 | .5 | Ω ◯ a. ⌈↘ ● p. |
| 8 | 32.4 | 23.2 | 95 | 70 | 7 | 7 | ------ | Ω² ◯ a. ⌈↘ p. |
| 9 | 32 | 24 | 93 | 87 | 2 | 10 | 9.9 | Ω² ● a. ⌈↘° ● p. |
| 10 | 30.3 | 24.3 | 95 | 80 | 9 | 7 | ------ | ● a. ⊤ d° p. |
| 11 | 33.1 | 23.8 | 90 | 87 | 6 | 9 | 9.2 | Ω² a. ⌈↘ ● p. |
| 12 | 31.1 | 23.6 | 92 | 68 | 7 | 6 | ------ | Ω² a. ⌈↘ ⌒ d° p. |
| 13 | 30.6 | 22.4 | 94 | 64 | 2 | 7 | .5 | Ω ● a. p° ⊤ p. |
| 14 | 31.1 | 23.6 | 92 | 70 | 9 | 7 | 7.1 | Ω d a. ● p. |
| 15 | 31 | 23 | 97 | 64 | 4 | 5 | ------ | Ω² a. |
| 16 | 31.2 | 23.4 | 98 | 62 | 8 | 7 | ------ | Ω a. ◯ a. p. |
| 17 | 30.5 | 23.6 | 93 | 71 | 8 | 10 | ------ | Ω a. |
| 18 | 30.3 | 22.7 | 93 | 55 | 7 | 8 | ------ | Ω a. ◯° p. |
| 19 | 28.8? | 23.1 | 91 | 68 | 8 | 10 | ------ | Ω a. |
| 20 | 28.3 | 23.9 | 95 | 83 | 10 | 10 | 4.3 | Ω² a. ●° a. p. ⊤ p. |
| 21 | 26.5 | 23.4 | 92 | 83 | 10 | 10 | 2 | ●° a. p. d° p. |
| 22 | 29.1 | 22.5 | 93 | 59 | 10 | 8 | ------ | ●° a. ◯² a. p. |
| 23 | 32.1 | 21.9 | 89 | 75 | 5 | 9 | 4.8 | Ω a. ● ⊤ p. |
| 24 | 31.7 | 23.6 | 92 | 67 | 2 | 5 | .5 | Ω² a. ⊤ ⌒ ●° ↯² p. |
| 25 | 30.9 | 23.2 | 91 | 73 | 6 | 7 | ------ | Ω² a. ⊤ p. |
| 26 | 32.6 | 23.6 | 94 | 62 | 6 | 5 | ------ | Ω² a. ⊤ ↯² p. |
| 27 | 31.8 | 23.3 | 90 | 74 | 7 | 8 | ------ | Ω a. ⊤ ↯ p. |
| 28 | 31.6 | 23.5 | 90 | 63 | 7 | 7 | ------ | Ω a. ⊤ ↯² p |
| 29 | 31.6 | 23.5 | 92 | 63 | 6 | 7 | ------ | Ω a. ⊤ ↯ p. |
| 30 | 31.5 | 22.9 | 93 | 65 | 8 | 7 | ------ | Ω a. ⊤ ↯ p. |
| Mean | 30.6 | 23.2 | 93.3 | 72.1 | 6.8 | 7.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 64 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.7 | 24.4 | 81 | 73 | 10 | 8 | 4.6 | ↯ a. ⌈↘° p. |
| 2 | 30.8 | 24.3 | 88 | 77 | 10 | 7 | ------ | ● a. ⌈↘ p. |
| 3 | 30.3 | 24.6 | 87 | 68 | 10 | 10 | ------ | ↯² a. ↯ p. |
| 4 | 30 | 26 | 81 | 72 | 10 | 9 | ------ | ------ |
| 5 | 30.6 | 24.5 | 92 | 75 | 7 | 7 | 9.1 | d a. |
| 6 | 30.8 | 23.9 | 82 | 72 | 10 | 10 | ------ | ● ⌈↘ a. ↯ p. |
| 7 | 30.1 | 24.2 | 80 | 78 | 10 | 10 | ? | Ω a. ● d ↯ p. |
| 8 | 30.8 | 25 | 90 | 74 | 10 | 5 | ------ | Ω d² ⌈↘ a. ◯° ⩛² |
| 9 | 30 | 23.8 | 86 | 75 | 10 | 9 | 4.3 | ⊤ a. ⌈↘ ●° p. |
| 10 | 31.1 | 24.5 | 97 | 75 | 10 | 9 | 1.2 | ● a. ◯° ⌈↘ p. |
| 11 | 30.8 | 25 | 84 | 75 | 10 | 5 | ------ | ↯ d a. ⌈↘° Ω p. |
| 12 | 31.2 | 24.6 | 85 | 76 | 10 | 10 | ------ | ------ |
| 13 | 31 | 25.2 | 73 | 71 | 6 | 4 | ------ | ↯ p. |
| 14 | 31.7 | 26 | 81 | 75 | 10 | 6 | ------ | ------ |
| 15 | 31.8 | 24.3 | 80 | 73 | 9 | 4 | ------ | ↯ p. |
| 16 | 31.2 | 23.8 | 82 | 73 | 10 | 10 | ------ | Ω° a. |
| 17 | 31.8 | 24.4 | 78 | 74 | 10 | 10 | ------ | ⊤ p. |
| 18 | 31.6 | 24.3 | 80 | 76 | 10 | 10 | ------ | ⊤ ↯ p. |
| 19 | 31.6 | 24.4 | 86 | 71 | 10 | 10 | ------ | ∞ a. ⌈↘ d² ⩛² p. |
| 20 | 30.5 | 23.8 | 86 | 76 | 10 | 10 | ------ | Ω a. d ↯ p. |
| 21 | 30.3 | 24.4 | 82 | 73 | 10 | 10 | 2.7 | ●° p. |
| 22 | 31.1 | 24.1 | 89 | 70 | 10 | 10 | ------ | d² p. |
| 23 | 31.8 | 21.8 | 84 | 71 | 10 | 10 | 1.3 | ●° a. p. |
| 24 | 33.1 | 22.4 | 86 | 72 | 2 | 10 | ------ | Ω d a. |
| 25 | 32 | 23.8 | 81 | 69 | 10 | 10 | 2 | Ω d a. ● ↯ p. |
| 26 | 32 | 23.4 | 82 | 78 | 5 | 8 | ------ | ⊤² ↯ p. |
| 27 | 33.7 | 23.2 | 85 | 79 | 10 | 9 | ------ | ↯ Ω a. ↯² p. |
| 28 | 31.3 | 23.7 | 80 | 87 | 7 | 10 | 2.8 | Ω° ●° ⌈↘ a. d p. |
| 29 | 32.5 | 22.1 | 84 | 67 | 9 | 8 | ------ | Ω ◯° a. |
| 30 | 32 | 23.3 | 78 | 76 | 10 | 10 | 1.7 | ⌈↘ Ω a. ⊤ p. |
| Mean | 31.3 | 24.1 | 83.7 | 74 | 9.2 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 29.7? | |

## METEOROLOGICAL DATA, ETC.—Continued.

### YAP (WESTERN CAROLINES).

[$\phi=9° 29' N$; $\lambda=138° 08' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 31.3 | 24.1 | 94 | 66 | 8 | 5 | ------ | ● a. ◯° a. p. d° p. |
| 2 | 30.5 | 25.7 | 85 | 71 | 7 | 8 | 2.3 | d° a. p. ●° ⌒° p. |
| 3 | 30.5 | 25 | 86 | 91 | 7 | 8 | 4.4 | ⌒° d° a. ● ☇ p. |
| 4 | 29.8 | 24.6 | 83 | 95 | 7 | 10 | 18.8 | ●° a. ● p. |
| 5 | 30.5 | 24.2 | 85 | 85 | 6 | 9 | 18.1 | ●° d° p. |
| 6 | 29.8 | 23.8 | 76 | 75 | 8 | 4 | 7.9 | d° ◯ a. p. ⌒° ● p. |
| 7 | 30.4 | 23.5 | 93 | 69 | 4 | 2 | ------ | ⌒° p. |
| 8 | 30.6 | 25.4 | 81 | 68 | 5 | 2 | ------ | |
| 9 | 30.4 | 25.2 | 83 | 70 | 4 | 2 | ------ | |
| 10 | 31 | 26 | 79 | 75 | 2 | 5 | ------ | d° p. |
| 11 | 30.8 | 26.2 | 87 | 77 | 3 | 8 | .3 | Ω° a. d° ⌒° p. |
| 12 | 29.4 | 24.8 | 93 | 81 | 7 | 9 | 6.9 | ● a. d° a. p. ⦶ p. |
| 13 | 30 | 25.5 | 82 | 73 | 8 | 6 | ------ | d° p. |
| 14 | 30 | 25.6 | 86 | 79 | 6 | 6 | 1.3 | ⌒° a. ●° a. p. |
| 15 | 30.4 | 26.2 | 83 | 74 | 6 | 8 | .3 | d° a. |
| 16 | 30.8 | 26.4 | 86 | 81 | 6 | 8 | 5.3 | ●° p. |
| 17 | 31 | 25.4 | 93 | 80 | 6 | 8 | 12.9 | ●° a. p. ⌒ ☇ p. |
| 18 | 27.2 | 24.4 | 90 | 88 | 10 | 10 | 6.4 | ↙° a. ●° a. p. |
| 19 | 30 | 25 | 83 | 79 | 4 | 8 | 27.2 | ●° ◯° a. ● ☇° p. |
| 20 | 27.8 | 24.4 | 87 | 89 | 10 | 9 | 26.9 | ● a. d° p. |
| 21 | 29.8 | 24.2 | 94 | 83 | 9 | 6 | 4 | ● a. ●° ⌒° ☇° p. |
| 22 | 30 | 24 | 91 | 92 | 9 | 9 | 11.2 | ●° a. ⌒° d° p. |
| 23 | 30.7 | 24.4 | 93 | 72 | 9 | 4 | ------ | |
| 24 | 31.2 | 23.6 | 92 | 71 | 1 | 5 | 7.6 | Ω a. ∞° p. |
| 25 | 31.3 | 23.4 | 91 | 66 | 8 | 2 | ------ | ● ⌒ a. d° p. |
| 26 | 31 | 23.8 | 91 | 73 | 2 | 6 | ------ | Ω a. |
| 27 | 31.7 | 24.2 | 86 | 63 | 2 | 4 | 5.6 | Ω° a. ⌒° d° ●° p. |
| 28 | 31 | 23.5 | 97 | 76 | 4 | 8 | .8 | ●° a. |
| 29 | 31.7 | 24.4 | 85 | 65 | 2 | 3 | ------ | Ω° a. |
| 30 | 31.7 | 23.4 | 85 | 65 | 1 | 5 | .2 | Ω a. ⌒° d° p. |
| Mean | 30.4 | 24.7 | 87.3 | 76.4 | 5.7 | 6.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 168.4 | |

### MAASIN.

[$\phi=10° 08' N$; $\lambda=124° 50' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 30.5 | 23.5 | 95 | 83 | 10 | 7 | ------ | |
| 2 | 29.6 | 22.8 | 95 | 84 | 8 | 10 | 10.9 | ≡° p a. d a. p. |
| 3 | 30.4 | 24 | 87 | 76 | 10 | 10 | ------ | |
| 4 | 30.6 | 23.1 | 89 | 79 | 10 | 10 | ------ | d ☇ p. |
| 5 | 29.8 | 23 | 91 | 86 | 10 | 10 | 54.1 | d p a. d² ☇ ⊍ p. |
| 6 | 29 | 23 | 87 | 87 | 10 | 10 | 34.5 | ●² d a. ⊍² d° p p. |
| 7 | 29.4 | 22.2 | 96 | 84 | 10 | 10 | 22.4 | d² ● a. |
| 8 | 31.5 | 22.8 | 93 | 71 | 10 | 6 | ------ | ⊍ p. |
| 9 | 31.5 | 22.8 | 95 | 80 | 10 | 10 | ------ | |
| 10 | 31.4 | 24 | 92 | 76 | 10 | 5 | ------ | |
| 11 | 31.8 | 23.8 | 93 | 70 | 9 | 8 | ------ | |
| 12 | 35 | 23.6 | 95 | 70 | 10 | 8 | ------ | |
| 13 | 32.4 | ------ | 86 | 76 | 7 | 10 | ------ | |
| 14 | 31 | 24.6? | 94 | 78 | 10 | 10 | ------ | |
| 15 | 31.4 | 23.2 | 95 | 75 | 10 | 6 | ------ | ⊍ ⦶ ☇ p. |
| 16 | 31.2 | 24.3 | 88 | 81 | 10 | 10 | ------ | |
| 17 | 30.8 | 22 | 92 | 78 | 10 | 8 | ------ | |
| 18 | 30 | 22.4 | 90 | 75 | 10 | 10 | ------ | |
| 19 | 30.5 | 22.4 | 90 | 72 | 10 | 10 | ------ | d ☇² p. |
| 20 | 30.4 | ------ | 91 | 85 | 10 | 10 | 5.3 | p p. |
| 21 | 29.4 | 23.8 | 93 | 89 | 10 | 10 | 45.7 | p a. d² a. p. |
| 22 | 28.6 | 22.5 | 94 | 83 | 10 | 10 | ------ | |
| 23 | 29.8 | 22.8 | 88 | 78 | 10 | 8 | ------ | ☇² p. |
| 24 | 29.5 | 21.7 | 93 | 84 | 10 | 8 | ------ | |
| 25 | 30 | 24.8 | 92 | 82 | 10 | 7 | ------ | d° ☈² a. p. |
| 26 | 30 | 24.4 | 92 | 80 | 10 | 5 | ------ | d ☈ a. ☈² p. |
| 27 | 30 | 24.2 | 95 | 81 | 10 | 9 | ------ | ☈ p. |
| 28 | 30.8 | 24.6 | 93 | 81 | 10 | 7 | ------ | ☈² p. |
| 29 | 31 | 24.6 | 93 | 78 | 10 | 10 | ------ | ☈ p. |
| 30 | 31.4 | 24.8 | 96 | 94 | 10 | 10 | 12.7 | p ⊤² a. |
| Mean | 30.6 | 23.4 | 92.1 | 79.9 | 9.8 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 185.6 | |

### SAN JOSE, BUENAVISTA.

[$\phi=10° 44' N$; $\lambda=121° 55' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 33.5 | 22 | 83 | 65 | 9 | 10 | ------ | d p. |
| 2 | 33.1 | 22 | 92 | 58 | 9 | 7 | ------ | |
| 3 | 33.9 | 22.9 | 87 | 64 | 10 | 10 | 0.8 | d ● ⊤ p. |
| 4 | 34 | 22.9 | 97 | 60 | 10 | 10 | ------ | |
| 5 | 33.1 | 22 | 82 | 59 | 4 | 9 | 1 | |
| 6 | 33.6 | 22.4 | 96 | 55 | 9 | 8 | ------ | ● a. |
| 7 | 34.4 | 22.2 | 79 | 58 | 7 | 8 | .3 | |
| 8 | 33.4 | 23.9 | 91 | 69 | 9 | 8 | ------ | ● a. d ⊤ ☇ p. |
| 9 | 34 | 23.6 | 89 | 64 | 5 | 8 | 3.6 | ∞ a. ☈ ● p. |
| 10 | 33.8 | 23.6 | 95 | 66 | 8 | 8 | 6.1 | d° ⊤ ● ☈ ☇ p. |
| 11 | 33.5 | 24 | 92 | 67 | 7 | 8 | ------ | ⊤ ☇ p. |
| 12 | 33.6 | 24 | 90 | ------ | 9 | 8 | 8.4 | ● ⊤ a. p. |
| 13 | 34 | 22 | 88 | 56 | 4 | 6 | ------ | |
| 14 | ------ | 21.1 | 88 | 60 | 6 | 5 | ------ | |
| 15 | ------ | 24 | 80 | 63 | 7 | 4 | ------ | |
| 16 | ------ | 23.1 | 92 | 63 | 4 | 3 | ------ | ☇ p. |
| 17 | ------ | 23.5 | 87 | 67 | 9 | 6 | ------ | ∞² a. ☇ p. |
| 18 | ------ | 24 | 87 | 63 | 8 | 5 | ------ | ∞ a. ☇ p. |
| 19 | ------ | 22.8 | 82 | 63 | 10 | 10 | ------ | ∞² a. ⊤ d p. |
| 20 | ------ | 23.7 | 86 | 81 | 9 | 10 | 3.6 | ∞ a. ● d ☇ p. |
| 21 | ------ | 24.5 | 89 | 84 | 10 | 10 | 1.8 | ● a. ⊤ d² ● p. |
| 22 | ------ | 23.1 | 96 | 63 | 9 | 10 | .3 | d ●° p. |
| 23 | ------ | 22.5 | 90 | 95 | 10 | 8 | 4.8 | ● p. |
| 24 | ------ | 22.6 | 95 | 76 | 8 | 9 | 24.9 | d² a. ● p. |
| 25 | ------ | 22.5 | 98 | 80 | 9 | 6 | ------ | ●² d a. |
| 26 | ------ | 23.5 | 91 | 92 | 8 | 10 | 3.9 | Ω² ⊤ a. ● ☇ p. |
| 27 | ------ | 23.6 | 95 | 68 | 9 | 6 | ------ | ☇ p. |
| 28 | ------ | 23.9 | 91 | 67 | 9 | 9 | .8 | ☇ Ω ● a. |
| 29 | ------ | 23 | 87 | 63 | 5 | 3 | ------ | Ω² a. ☇ p. |
| 30 | ------ | 24 | 87 | 68 | 9 | 9 | 1.3 | Ω a. ● ☇ p. |
| Mean | 33.7 | 23.1 | 89.4 | 67.5 | 8 | 7.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 61.6 | |

### CUYO.

[$\phi=10° 51' N$; $\lambda=121° 01' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 32 | 26.2 | 80 | 63 | 9 | 9 | ------ | |
| 2 | 30.2 | 26.3 | 79 | 73 | 9 | 9 | ------ | |
| 3 | 31.4 | 25.8 | 81 | 66 | 9 | 9 | ------ | ⊕ p. |
| 4 | 33.1 | 26.1 | 87 | 58 | 9 | 9 | ------ | |
| 5 | 32 | 26 | 77 | 64 | 8 | 7 | ------ | |
| 6 | 31.8 | 25.9 | 82 | 63 | 9 | 7 | ------ | ⊕ p. |
| 7 | 31.7 | 25.9 | 76 | 63 | 10 | 5 | ------ | |
| 8 | 31.7 | 26.2 | 80 | 68 | 8 | 9 | ------ | ⊕ p. |
| 9 | 33.2 | 26.5 | 88 | 64 | 9 | 8 | ------ | |
| 10 | 33.3 | 26.1 | 90 | 74 | 9 | 9 | 1.3 | d ☈° p. |
| 11 | 34.3 | 24.4 | 95 | 64 | 10 | 7 | ------ | ●° d° a. ☇² p. |
| 12 | 33.7 | 26.1 | 84 | 63 | 9 | 7 | 1 | ⊤° ●° a. ☈ p. |
| 13 | 34 | 26.7 | 86 | 56 | 8 | 8 | ------ | |
| 14 | 33.2 | 26.7 | 83 | 61 | 9 | 8 | ------ | |
| 15 | 32.7 | 26.8 | 83 | 62 | 9 | 7 | ------ | |
| 16 | 33.4 | 24.4 | 91 | 68 | 8 | 9 | ------ | |
| 17 | 32.8 | 25.6 | 89 | 66 | 9 | 9 | ------ | |
| 18 | 33.9 | 25.8 | 86 | 58 | 8 | 9 | ------ | |
| 19 | 33.8 | 24.5 | 88 | 62 | 9 | 9 | ------ | |
| 20 | 33.7 | 25.2 | 87 | 64 | 8 | 8 | ------ | ☈² p. |
| 21 | 32.6 | 27 | 81 | 71 | 10 | 10 | ------ | d° a. p. |
| 22 | 31.5 | 27 | 73 | 66 | 9 | 9 | ------ | |
| 23 | 30.3 | 25.4 | 85 | 70 | 10 | 9 | 21.8 | d° a. ● p. |
| 24 | 31.9 | 24.4 | 95 | 65 | 9 | 9 | 1.8 | ●° a. ◯ d² p. |
| 25 | 33.5 | 26 | 87 | 61 | 8 | 7 | 19.6 | ☇ p. |
| 26 | 28.3 | 24.2 | 96 | 91 | 10 | 10 | 2 | ● d² ⊤ a. |
| 27 | 32.3 | 25.2 | 95 | 72 | 9 | 8 | 2.8 | ⊕ ☇ p. |
| 28 | 32.8 | 24.6 | 96 | 66 | 9 | 8 | ------ | ● a. |
| 29 | 33.3 | 24.8 | 96 | 68 | 9 | 8 | ------ | |
| 30 | 33.8 | 25.1 | 93 | 60 | 8 | 7 | ------ | |
| Mean | 32.5 | 25.7 | 86.3 | 65.7 | 8.9 | 8.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 50.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BORONGAN.

[$\phi=11° 37' N; \lambda=125° 26' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.5 | 22.8 | 93 | 76 | 9 | 7 | 70.1 | ●° a. p. ⌒ ● p. |
| 2 | 27 | 22.6 | 97 | 91 | 10 | 8 | 26.5 | ● a. ● p. |
| 3 | 30 3 | 22.5 | 98 | 73 | 4 | 7 | 14 | ●° a. ● p. |
| 4 | 30.2 | 23.5 | 79 | 67 | 6 | 6 | 2.6 | ● a. ○ ☇° p. |
| 5 | 27.2 | 23.5 | 94 | 95 | 9 | 9 | 51.3 | ⊤ a. ● a. p. ☇ p. |
| 6 | 25.8 | 22.4 | 90 | 90 | 10 | 9 | 76.2 | ●² a. ● a. p. |
| 7 | 29 | 23.7 | 93 | 78 | 10 | 5 | 52.6 | ●² a. ● a. p. |
| 8 | 30.1 | 23.4 | 97 | 76 | 7 | 6 | 3 | ● a. ⊕ ●° p. |
| 9 | 30.5 | 24.4 | 93 | 78 | 9 | 8 | 19.1 | ● a. p. |
| 10 | 30.4 | 24.5 | 95 | 79 | 9 | 8 | 6.6 | ● a. p. |
| 11 | 30.8 | 23.5 | 97 | 73 | 4 | 5 | ------ | ● a. ⊍ p. |
| 12 | 30.6 | 23.5 | 98 | 69 | 6 | 5 | ------ | Ω ≡ ○° a. d ⊕ p. |
| 13 | 30.6 | 22.4 | 97 | 76 | 4 | 5 | 1 | Ω ≡ ● a. ⊍ ⊕ p. |
| 14 | 31 | 23.4 | 96 | 75 | 6 | 6 | ------ | ●° a. ⊍° p. |
| 15 | 30.7 | 22.8 | 97 | 69 | 4 | 4 | ------ | Ω ≡ a. ☇ ⊍° p. |
| 16 | 30.5 | 22.4 | 97 | 67 | 4 | 4 | ------ | Ω ≡ a. ☇ p. |
| 17 | 30.7 | 22.4 | 97 | 70 | 2 | 4 | ------ | Ω ≡ ○° a. ☇ p. |
| 18 | 30.6 | 23 | 97 | 62 | 3 | 3 | ------ | Ω ≡ a. ☇ p. |
| 19 | 31 | 22.2 | 97 | 68 | 2 | 6 | 2 | Ω ≡ a. ● p. |
| 20 | 30 | 23 | 96 | 77 | 5 | 9 | .6 | ≡° a. ●° p. |
| 21 | 30.5 | 23.5 | 95 | 72 | 8 | 6 | 17 | ●° ≡° a. ● ☇ p. |
| 22 | 24.6 | 20.4 | 97 | 91 | 9 | 10 | 67.9 | ● a. p. ●² ☇ p. |
| 23 | 31 | 19.7 | 97 | 68 | 4 | 5 | ------ | Ω ≡ a. ☇ p. |
| 24 | 31.3 | 22.4 | 97 | 77 | 3 | 6 | 3 | Ω ≡ a. ⊤ ● ☇ p. |
| 25 | 32.5 | 22.6 | 97 | 93 | 4 | 8 | 8.9 | Ω ≡ a. ● ☈ p. |
| 26 | 31.8 | 22.5 | 97 | 79 | 3 | 5 | .5 | Ω≡a.●°⊤²☇²p. |
| 27 | 31.8 | 23 | 97 | 90 | 6 | 8 | 9.1 | Ω≡a. ● ☈ p. |
| 28 | 32 | 22.4 | 98 | 81 | 2 | 6 | ------ | Ω≡○°a. ⊤ ☇ p. |
| 29 | 31.5 | 22 | 96 | 81 | 3 | 8 | ------ | Ω ≡° a. ☈ p. |
| 30 | 30.5 | 23 | 97 | 90 | 3 | 9 | 4.1 | Ω ≡ a. ☈ ● p. |
| Mean | 30.1 | 22.8 | 95.5 | 77.7 | 5.6 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 436.1 |  |

### MASBATE.

[$\phi=12° 22' N; \lambda=123° 36' E$]

| Day. | Temperature |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.6 | 25.5 | 89 | ------ | 9 | 8 | 0.3 |  |
| 2 | 29 | 23.8 | 87 | 80 | 10 | 10 | 1.8 |  |
| 3 | 31 | 23.4 | 97 | 74 | 7 | 8 | ------ |  |
| 4 | 31.5 | 23.6 | 94 | 58 | 8 | 7 | ------ |  |
| 5 | 31.4 | 23.2 | 93 | 76 | 6 | 9 | ------ |  |
| 6 | 31.5 | 23.2 | 93 | 86 | 9 | 8 | ------ |  |
| 7 | 30.5 | 25 | 84 | 76 | 9 | 7 | 7.4 |  |
| 8 | 29.2 | 24 | 92 | 81 | 7 | 6 | ------ |  |
| 9 | 31.5 | 24.6 | 94 | 73 | 8 | 8 | ------ |  |
| 10 | 31.5 | 24.5 | 97 | 88 | 6 | 9 | ------ |  |
| 11 | 31.8 | 24.2 | 98 | 65 | 7 | 8 | ------ |  |
| 12 | 32.6 | 24.5 | 98 | 60 | 8 | 6 | ------ |  |
| 13 | 32.4 | 24 | 97 | 51 | 8 | 7 | ------ |  |
| 14 | 32.6 | 23.6 | 97 | 61 | 9 | 8 | ------ |  |
| 15 | 31.6 | 24.5 | 94 | 68 | 8 | 8 | ------ |  |
| 16 | 32.8 | 24.4 | 93 | 54 | 9 | 9 | ------ |  |
| 17 | 32.8 | 24.6 | 95 | 60 | 9 | 9 | ------ |  |
| 18 | 32.5 | 24.5 | 93 | 64 | 9 | 9 | ------ |  |
| 19 | 32.8 | 24.8 | 89 | 55 | 9 | 8 | ------ |  |
| 20 | 31.4 | 25.4 | 94 | 67 | 8 | 9 | ------ |  |
| 21 | 31.5? | 26.4 | 86 | 59 | 10 | 9 | .5 |  |
| 22 | 27.2 | 25.6 | 92 | 92 | 10 | 10 | 58.2 |  |
| 23 | 30.5 | 22 | 96 | 66 | 10 | 7 | 2.3 |  |
| 24 | 31.5 | 25.6? | 97 | 69 | 7 | 6 | ------ |  |
| 25 | 31.8 | 25 | 96 | 68 | 9 | 4 | ------ |  |
| 26 | 32.4 | 24.5 | 97 | ------ | 9 | 8 | .3 |  |
| 27 | 31.6 | 24.2 | 97 | 73 | 9 | 8 | ------ |  |
| 28 | 30.2 | 24.5 | 87 | 70 | 9 | 9 | ------ |  |
| 29 | 30.5 | 26.2 | 86 | 76 | 8 | 8 | ------ |  |
| 30 | 30.8 | 25.4 | 92 | 72 | 7 | 5 | ------ |  |
| Mean | 31.3 | 24.5 | 93.1 | 69.4 | 8.4 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 70.8 |  |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi=13° 24' N; \lambda=144° 38' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29 | 25.2 | 84 | 70 | 3 | 8 | ------ |  |
| 2 | 29 | 24.8 | 84 | 68 | 8 | 4 | ------ |  |
| 3 | 28.4 | 24.2 | 87 | 74 | 10 | 10 | 8.9 |  |
| 4 | 29.4 | 24.4 | 84 | 66 | 10 | 9 | 5.9 |  |
| 5 | 28.4 | 24.4 | 80 | 70 | 6 | 5 | ------ |  |
| 6 | 29.4 | 22 | 83 | 68 | 6 | 4 | ------ |  |
| 7 | 28.4 | 24 | 87 | 74 | 10 | 10 | 1.3 |  |
| 8 | 29.6 | 23.8 | 84 | 65 | 8 | 8 | ------ |  |
| 9 | 29 | 24.8 | 84 | 66 | 5 | 4 | ------ |  |
| 10 | 30 | 24.8 | 81 | 63 | 10 | 7 | 2.5 |  |
| 11 | 30 | 24.8 | 84 | 64 | 5 | 8 | ------ |  |
| 12 | 30.2 | 25.4 | 84 | 67 | 3 | 8 | ------ |  |
| 13 | 29.4 | 25.6 | 84 | 71 | 10 | 8 | ------ |  |
| 14 | 29.6 | 25 | 79 | 71 | 10 | 6 | ------ |  |
| 15 | 30.2 | 25.2 | 84 | 64 | 4 | 8 | ------ |  |
| 16 | 29 | 25.6 | 84 | 76 | 10 | 10 | ------ |  |
| 17 | 29.6 | 24.8 | 76 | 64 | 10 | 10 | ------ |  |
| 18 | 30.4 | 25.4 | 81 | 63 | 10 | 7 | ------ |  |
| 19 | 28.8 | 25 | 84 | 76 | 10 | 8 | ------ |  |
| 20 | 30 | 24.6 | 84 | 68 | 10 | 7 | ------ |  |
| 21 | 29.6 | 25.8 | 84 | 71 | 10 | 9 | ------ |  |
| 22 | 29.2 | 24 | 84 | 68 | 10 | 10 | ------ |  |
| 23 | 29.6 | 25 | 84 | 60 | 10 | 10 | ------ |  |
| 24 | 29.6 | 25.2 | 81 | 72 | 10 | 10 | ------ |  |
| 25 | 30.6 | 24 | 82 | 66 | 6 | 8 | ------ |  |
| 26 | 29.6 | 25 | 81 | 67 | 3 | 7 | ------ |  |
| 27 | 29.2 | 25 | 79 | 80 | 4 | 9 | 3.8 |  |
| 28 | 30.2 | 23 | 84 | 66 | 2 | 10 | ------ |  |
| 29 | 30 | 24.4 | 81 | 68 | 6 | 3 | ------ |  |
| 30 | 30 | 23.4 | 81 | 71 | 2 | 5 | ------ |  |
| Mean | 29.5 | 24.6 | 82.8 | 68.6 | 7.4 | 7.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 22.4 |  |

### CALAPAN.

[$\phi=13° 25' N; \lambda=121° 11' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31 | 23.2 | 88 | 67 | 10 | 5 | ------ |  |
| 2 | 31 | 23.3 | 95 | 63 | 10 | 9 | ------ |  |
| 3 | 29.7 | 22.5 | 91 | 74 | 10 | 10 | 39 | d ●° a. ●² ☈ p. |
| 4 | 30.9 | 23.3 | 95 | 72 | 10 | 8 | 6.4 | d ⌒² a. ● ⊤ p. |
| 5 | 30.2 | 23 | 97 | 62 | 10 | 9 | ------ | p° p. |
| 6 | 30.6 | 24.4 | 92 | 65 | 10 | 9 | 3.1 | ● a. |
| 7 | 30.4 | 22.5 | 95 | 66 | 9 | 10 | ------ | d a. ⊕ p. |
| 8 | 30.2 | 24.5 | 78 | 68 | 10 | 8 | ------ | p° a. p. |
| 9 | 30.7 | 24.6 | 90 | 75 | 10 | 6 | 1.5 | ☈ ●° p. |
| 10 | 31.2 | 24.9? | 97 | 79 | 10 | 8 | 2 | d ●° a. |
| 11 | 31 | 23.7 | 93 | 76 | 3 | 8 | ------ | ☈ p. |
| 12 | 31.4 | 22.5 | 81 | 78 | 4 | 4 | ------ | ⊤ p. |
| 13 | 31.6 | 25 | 88 | 70 | 9 | 2 | 2.8 | ⊕ p p. |
| 14 | 31.2 | 23 | 92 | 55 | 9 | 3 | ------ | ⊍ ⊕ p. |
| 15 | 32.4 | 21.7 | 89 | 58 | 9 | 4 | ------ |  |
| 16 | 31.5 | 22.2 | 81 | 71 | 8 | 4 | ------ | ☇ p. |
| 17 | 31.8 | 22.6 | 97 | 69 | 10 | 9 | ------ | ⊤ a. p. |
| 18 | 32 | 23.1 | 91 | 66 | 10 | 10 | ------ |  |
| 19 | 32 | 23.1 | 90 | 70 | 10 | 10 | 24.4 | ● ☈ p. |
| 20 | 31.4 | 23.9 | 98 | 69 | 10 | 9 | 45 | ≡ a. ●² ☈ p. |
| 21 | 31.2 | 23.6 | 94 | 70 | 10 | 10 | 8.5 | ☈ ● ⌒° a. d p. |
| 22 | 30.2 | 24 | 94 | 81 | 10 | 10 | 51.3 | ● a. p. d p. |
| 23 | 25.5 | 22 | 98 | 97 | 10 | 10 | 56.1 | ●² a. ●° a. p. |
| 24 | 31.2 | 22.5 | 97 | 72 | 10 | 10 | .3 | ●° a. p. |
| 25 | 30.5 | 22.5 | 95 | 90 | 10 | 10 | 3.9 | p ☈ p. |
| 26 | 31.2 | 23 | 96 | 91 | 10 | 10 | 2.3 | d ⊤ p. |
| 27 | 30.6 | 23.5 | 97 | 89 | 10 | 10 | 5.1 | d ⊤ p. |
| 28 | 30.7 | 23.2 | 99 | 76 | 10 | 10 | ------ | ●° p. |
| 29 | 31 | 22.6 | 96 | 72 | 10 | 9 | ------ | Ω a. ⊤ ●° p. |
| 30 | 31 | 22.9 | 98 | 76 | 6 | 10 | ------ | ⊤ a. p. |
| Mean | 30.8 | 23.2 | 92.7 | 72.9 | 9.2 | 8.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 251.7 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.6 | 23.4 | 88 | 62 | 6 | 7 | ------ | ⌒° p. |
| 2 | 31 | 22.4 | 75 | 58 | 9 | 8 | 10.8 | ● p. |
| 3 | 30.8 | 23 | 93 | 71 | 7 | 7 | 5.7 | ● p. |
| 4 | 31.2 | 24 | 89 | 65 | 7 | 7 | .5 | ● a. p p. |
| 5 | 31.2 | 22 | 91 | 69 | 5 | 7 | ------ | |
| 6 | 31.7 | 22 | 77 | 62 | 3 | 5 | ------ | ⌓° a. |
| 7 | 32 | 22.5 | 77 | 63 | 5 | 6 | 20.1 | ⌓° a. |
| 8 | 28.9 | 23.8 | 87 | 81 | 8 | 9 | 19.6 | ●² a. ⌒ d ●° p. |
| 9 | 29.2 | 24.4 | 91 | 87 | 9 | 9 | 48.2 | ↙° a. ● a. p. |
| 10 | 31 | 23 | 90 | 75 | 8 | 4 | ------ | |
| 11 | 31.2 | 24 | 92 | 78 | 6 | 6 | ------ | ●° a. |
| 12 | 30.9 | 24 | 92 | 75 | 6 | 5 | ------ | d° a. |
| 13 | 30.9 | 22.4 | 92 | 68 | 5 | 4 | ------ | |
| 14 | 30.9 | 21.9 | 96 | 75 | 4 | 5 | ------ | ⌓° a. |
| 15 | 31.3 | 22 | 97 | 69 | 4 | 7 | ------ | ⌓ a. |
| 16 | 31.5 | 22 | 95 | 75 | 3 | 7 | 2.5 | ⌓ a. ●° p. |
| 17 | 31.5 | 22.4 | 96 | 72 | 8 | 8 | ------ | ●° a. |
| 18 | 31.7 | 22 | 92 | 70 | 6 | 8 | ------ | ⌓ a. p° p. |
| 19 | 31.6 | 23.2 | 93 | 80 | 9 | 9 | .3 | ⌒ a. d ⊤ p. |
| 20 | 31.9 | 23 | 93 | 70 | 9 | 8 | .5 | p° a. d° p. |
| 21 | 32.4 | 23.2 | 85 | 60 | 9 | 9 | 2.5 | ●° d° a. p. ⌒² p. |
| 22 | 32.7 | 23.5 | 92 | 70 | 10 | 10 | 40.5 | ● a. Γϟ ↙° ●² p. |
| 23 | 28.8 | 23.9 | 85 | 76 | 10 | 6 | 3.6 | ● a. |
| 24 | 30.9 | 24 | 90 | 75 | 9 | 4 | ------ | p° p. |
| 25 | 32.2 | 24.1 | 92 | 75 | 5 | 5 | ------ | ϟ p. |
| 26 | 32 | 24.5 | 93 | 69 | 7 | 7 | .1 | ⌓ a. d² ⊤ p. |
| 27 | 31.9 | 23.6 | 96 | 74 | 7 | 9 | ------ | ⊤ p. |
| 28 | 32.2 | 24 | 93 | 65 | 10 | 8 | ------ | ⊤ a. p. p° ϟ d° p. |
| 29 | 32.4 | 23.4 | 86 | 74 | 6 | 8 | ------ | ⊤ a. |
| 30 | 31.8 | 23 | 93 | 86 | 9 | 10 | 25.9 | ● a. p. |
| Mean | 31.3 | 23.2 | 90 | 71.6 | 7 | 7.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 180.8 | |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.5 | ------ | 92 | 69 | 7 | 8 | 0.5 | d p. |
| 2 | 30.6 | 22.5 | 88 | 63 | 8 | 8 | .6 | |
| 3 | 31 | 22.3 | 95 | 92 | 9 | 9 | 5.6 | d a. ●° a. p. |
| 4 | 31.4 | 21.8 | 98 | 69 | 9 | 9 | ------ | |
| 5 | 33 | 19 | 98 | 72 | 7 | 9 | ------ | |
| 6 | 31.1 | 22.4 | 91 | 57 | 4 | 8 | ------ | |
| 7 | 32.1 | 21.8 | 88 | 62 | 9 | 9 | 3.9 | d ⌒ p. |
| 8 | 29 | 22.8 | 97 | 80 | 10 | 9 | 22.1 | d a. ● a. p. |
| 9 | 29.7 | 22.9 | 98 | 95 | 9 | 10 | 70.9 | ⊤° ●° a. d ●² p. |
| 10 | 32 | 21.2 | 98 | 77 | 8 | 7 | ------ | |
| 11 | 34.5 | 21.4 | 98 | 62 | 6 | 5 | ------ | ⊤° p. |
| 12 | 34 | 21.6 | 98 | 83 | 8 | 10 | 9.7 | ● p. |
| 13 | 32.2 | 21.6 | 97 | 63 | 7 | 8 | ------ | |
| 14 | 33.2 | 19.5 | 96 | 63 | 6 | 8 | ------ | |
| 15 | 33 | 20.9 | 98 | 58 | 3 | 5 | ------ | |
| 16 | 33.8 | 21.3 | 96 | 84 | 5 | 8 | 1.8 | d ⊤° ●° p. |
| 17 | 33.6 | 20.5 | 96 | 55 | 8 | 8 | ------ | |
| 18 | 32 | 21.5 | 97 | 63 | 9 | 9 | ------ | |
| 19 | 33.5 | 21.2 | 98 | 66 | 9 | 9 | ------ | ⊤° p. |
| 20 | 32.1 | 21.9 | 97 | 67 | 9 | 9 | ------ | |
| 21 | 32 | 22 | 92 | 67 | 9 | 9 | 6.7 | ●° d p. |
| 22 | 29 | 22.5 | 95 | 86 | 10 | 10 | 45.7 | ● a. p. |
| 23 | 30.3 | 22 | 83 | 73 | 9 | 8 | 1 | ●° a. |
| 24 | 32.3 | 22 | 97 | 63 | 3 | 6 | ------ | |
| 25 | 33 | 22.7 | 96 | 62 | 8 | 7 | ------ | d a. |
| 26 | 32.4 | 22.8 | 95 | 63 | 7 | 6 | ------ | |
| 27 | 33.2 | 23.1 | 97 | 61 | 9 | 7 | ------ | |
| 28 | 33.2 | 23.9 | 95 | 60 | 9 | 8 | .5 | ●° ⊤° p. |
| 29 | 32.6 | 22 | 97 | 76 | 6 | 8 | ------ | ⊤° p. |
| 30 | 32.4 | 21.2 | 98 | 72 | 5 | 9 | ------ | |
| Mean | 32.1 | 21.8 | 95.3 | 69.4 | 7.5 | 8.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 169 | |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 35.2 | 19.1 | 88 | 49 | 3 | 5 | ------ | |
| 2 | 34.5 | 19.5 | 89 | 47 | 4 | 5 | ------ | |
| 3 | 32.4 | 18.8 | 86 | 67 | 9 | 9 | 0.3 | d p. |
| 4 | 35 | 23.2 | 92 | 54 | 6 | 7 | ------ | ⌒ a. |
| 5 | 33.4 | 22 | 95 | 62 | 5 | 7 | ------ | |
| 6 | 34.3 | 22.5 | 83 | 43 | 7 | 3 | ------ | |
| 7 | 34.4 | 19 | 83 | 47 | 3 | 5 | ------ | |
| 8 | 34 | 20.2 | 86 | 55 | 7 | 6 | ------ | |
| 9 | 34.1 | 23.3 | 94 | 68 | 3 | 5 | ------ | ⊤ ϟ p. |
| 10 | 35.1 | 23.6 | 90 | 59 | 7 | 4 | ------ | |
| 11 | 34.6 | 23.4 | 93 | 60 | 1 | 7 | ------ | |
| 12 | 36.2 | 22.9 | 91 | 47 | 1 | 4 | ------ | |
| 13 | 35.9 | 22.5 | 89 | 42 | 1 | 3 | ------ | |
| 14 | 35 | 22.3 | 88 | 45 | 3 | 3 | ------ | |
| 15 | 34 | 21.4 | 89 | 52 | 3 | 5 | ------ | ⊤ p. |
| 16 | 33.8 | 21.7 | 92 | 59 | 1 | 3 | ------ | |
| 17 | 34.8 | 22.6 | 93 | 53 | 1 | 4 | ------ | |
| 18 | 33.7 | 22.5 | 93 | 58 | 3 | 5 | ------ | |
| 19 | 32.8 | 22.7 | 92 | 68 | 9 | 5 | ------ | ⊤ ϟ p. |
| 20 | 34.3 | 24.3 | 93 | 58 | 9 | 6 | ------ | ϟ p. |
| 21 | 34.9 | 23.5 | 90 | 64 | 6 | 9 | ------ | d° p. |
| 22 | 31.1 | 23 | 92 | 74 | 7 | 10 | 53.3 | d ●² ⊤ p. |
| 23 | 25 | 21.4 | 97 | 96 | 10 | 10 | 85.9 | ●² a. p. |
| 24 | 30.3 | 22.4 | 97 | 69 | 7 | 6 | ------ | ⌒ p. |
| 25 | 31.4 | 22.2 | 95 | 69 | 4 | 7 | ------ | |
| 26 | 33.1 | 23.3 | 96 | 69 | 6 | 7 | .3 | d² ⊤ p. |
| 27 | 31.3 | 23.2 | 94 | 70 | 7 | 7 | 5.3 | ● p. |
| 28 | 32.5 | 23 | 92 | 68 | 7 | 6 | ------ | ϟ p. |
| 29 | 33.6 | 23.3 | 97 | 65 | 4 | 6 | ------ | |
| 30 | 33.4 | 22.8 | 96 | 69 | 4 | 9 | 17.3 | ⊤ ● p. |
| Mean | 33.5 | 22.2 | 91.5 | 60.2 | 4.9 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 162.4 | |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | 31.5 | 20.4 | 97 | 63 | 3 | 7 | ------ | |
| 11 | 31.9 | 19.9 | 98 | 72 | 7 | 8 | 11.7 | ⌓ ≡ a. ● ⊤° p. |
| 12 | 28.8 | 20 | 98 | 71 | 2 | 5 | ------ | ≡ a. |
| 13 | 31.3 | 20.5 | 98 | 63 | 2 | 3 | ------ | |
| 14 | 32 | 20.3 | 98 | 64 | 7 | 6 | ------ | |
| 15 | 32.4 | 20.8 | 98 | 63 | 2 | 5 | ------ | ⌓ ≡ a. |
| 16 | 32 | 20.2 | 98 | 63 | 2 | 2 | ------ | ≡ a. |
| 17 | 31.8 | 21.1 | 98 | 63 | 2 | 7 | ------ | ⌓ a. |
| 18 | 32.2 | 21.5 | 97 | 64 | 8 | 8 | ------ | ⊤° a. |
| 19 | 32 | 20.9 | 98 | 64 | 2 | 3 | ------ | ⌓ ≡ a. |
| 20 | 32.5 | 21.2 | 98 | 64 | 7 | 8 | ------ | p° a. |
| 21 | 32.1 | 20.6 | 98 | 64 | 2 | 6 | ------ | |
| 22 | 31.6 | 21 | 98 | 79 | 8 | 9 | 61 | ⌓ p° a. ●² p. |
| 23 | 29.8 | 20 | 98 | 82 | 10 | 10 | 97.6 | ● a. p. ●² p. |
| 24 | 25.5 | 19.6 | 98 | 86 | 7 | 9 | ------ | p° p. |
| 25 | 31.7 | 20.1 | 98 | 74 | 2 | 9 | .8 | ⊤° ●° p. |
| 26 | 31.9 | 21.2? | 98 | 63 | 7 | 8 | ------ | |
| 27 | 32.7 | 21.7 | 97 | 65 | 8 | 8 | 13.5 | p° a. ⊤° ● p. |
| 28 | 31.7 | 21.5 | 98 | 70 | 10 | 9 | 5.8 | ● a. |
| 29 | 30.3 | 21.1 | 98 | 71 | 8 | 8 | ------ | ⌓ ≡ a. Γϟ° a. p. |
| 30 | 31.8 | 21.2 | 98 | 75 | 7 | 8 | 19.8 | ● a. |
| Mean | 31.3 | 20.7 | 97.9 | 68.7 | 5.4 | 7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 210.2[1] | |

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[1] 21 days of observation.

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### SANTA CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 31.1 | 19.2 | 97 | 61 | 3 | 5 | ------ | Ω a. p p. |
| 2 | 31.3 | 20.3 | 94 | 57 | 4 | 6 | ------ | Ω a. |
| 3 | 30.7 | 20.2 | 97 | 67 | 4 | 8 | 11.2 | Ω° a. d ● ↯ p. |
| 4 | 30.5 | 22.9 | 97 | 68 | 9 | 7 | .8 | ●° a. d a. p. |
| 5 | 30.2 | 21.8 | 95 | 74 | 5 | 9 | ------ | Ω² a. d ⊖ p. |
| 6 | 30.6 | 22.6 | 96 | 62 | 6 | 6 | ------ | Ω² a. d p. |
| 7 | 31 | 19.2 | 98 | 60 | 2 | 4 | ------ | Ω a. |
| 8 | 31.1 | 20.5 | 98 | 70 | 8 | 8 | .2 | Ω° a. d ●° ⊖ p. |
| 9 | 31.3 | 23.4 | 96 | 70 | 8 | 7 | ------ | Ω² d a. d ⊖ p. |
| 10 | 31.7? | 22.8 | 97 | 63 | 3 | 6 | ------ | Ω° a. p ↯ p. |
| 11 | 33.7 | 22.6 | 98 | 59 | 1 | 7 | ------ | ⊤ ↯ p. |
| 12 | 34.4 | 22 | 95 | 60 | 4 | 4 | ------ | Ω° a. ⊖ p. |
| 13 | 33.9 | 22.1 | 91 | 53 | 3 | 1 | ------ | Ω a. |
| 14 | 33 | 21.2 | 97 | 55 | 4 | 2 | ------ | Ω a. ↯ p. |
| 15 | 33.9 | 21.4 | 98 | 62 | 7 | 4 | ------ | Ω° a. ⊤° ↯ p. |
| 16 | 33.8 | 22.6 | 97 | 50 | 1 | 4 | ------ | Ω° a. |
| 17 | 34.1 | 21.9 | 98 | 62 | 7 | 6 | ------ | Ω° a. ⌈↯ d p. |
| 18 | 33.9 | 22.6 | 99 | 48 | 9 | 7 | ------ | Ω a. ⊤° ↯ ⊖ p. |
| 19 | 33.7 | 22.9 | 97 | 49 | 10 | 7 | 1.5 | Ω° a. ↯ ● p. |
| 20 | 34 | 24.2 | 98 | 62 | 9 | 8 | ------ | d a. ↯ p. |
| 21 | 33 | 23 | 98 | 73 | 6 | 9 | 4 | ●° p a. p. |
| 22 | 32.8 | 23.1 | 95 | 77 | 9 | 9 | 22.1 | d a. ● a. p. ↯° p. |
| 23 | 31.4 | 22.6 | 94 | 84 | 10 | 10 | 29.4 | ●² a. ●° p. |
| 24 | 27.6 | 22.7 | 97 | 84 | 6 | 9 | 3.3 | ●° d a. p. ↯° p. |
| 25 | 32 | 21.7 | 98 | 64 | 2 | 4 | 2 | Ω² a. ●° ⌈↯ p. |
| 26 | 32.8 | 22.6 | 97 | 72 | 5 | 7 | ------ | ⌈↯ p p. |
| 27 | 32.6 | 23.1 | 97 | 86 | 8 | 9 | 5.9 | Ω a. p ⌈↯ ●° p. |
| 28 | 32.1 | 23 | 97 | 67 | 9 | 7 | ------ | d a. ⊤ ⌒° ↯ p. |
| 29 | 31.3 | 22.1 | 97 | 63 | 9 | 7 | ------ | Ω a. ○ ⊤ ↯ p. |
| 30 | 33.3 | 22.7 | 98 | 68 | 4 | 8 | ------ | ⌒° a. ○ ⊤ ↯ ⌒ p. |
| Mean | 32.2 | 22.1 | 96.7 | 65 | 5.8 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 80.4 | |

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 33.1 | 20.6 | 81 | 44 | 3 | 6 | ------ | |
| 2 | 33.1 | 20.7 | 83 | 41 | 3 | 4 | ------ | |
| 3 | 31.8 | 19 | 79 | 58 | 3 | 9 | 8.9 | Ω a. ●° p. |
| 4 | 30.6 | 21.8 | 93 | 55 | 8 | 6 | 2.3 | ●° a. |
| 5 | 32.7 | 21.4 | 73 | 51 | 5 | 9 | ------ | Ω a. |
| 6 | 32.3 | 21.7 | 74 | 47 | 3 | 4 | ------ | |
| 7 | 33.1 | 20.3 | 69 | 51 | 2 | 3 | ------ | |
| 8 | 32.9 | 20.7 | 83 | 53 | 2 | 5 | ------ | |
| 9 | 33.8 | 20.9 | 69 | 58 | 3 | 6 | ------ | ↯ p. |
| 10 | 34.1 | 22.7 | 80 | 50 | 8 | 5 | ------ | ⌒ a. |
| 11 | 35 | 22.1 | 92 | 45 | 2 | 4 | ------ | Ω ⌒ a. |
| 12 | 34.8 | 23.5 | 86 | 49 | 8 | 5 | ------ | |
| 13 | 35 | 23.2 | 72 | 44 | 3 | 3 | ------ | ↯ p. |
| 14 | 34.4 | 22 | 82 | 52 | 2 | 6 | ------ | |
| 15 | 34.7 | 21.7 | 90 | 43 | 2 | 4 | ------ | Ω a. ∞° p. |
| 16 | 33.4 | 21.8 | 90 | 39 | 3 | 4 | ------ | |
| 17 | 34.8 | 22.3 | 91 | 44 | 4 | 3 | ------ | ∞ p. |
| 18 | 34.6 | 22.4 | 94 | 51 | 4 | 8 | ------ | ∞ p. |
| 19 | 33.8 | 22.5 | 94 | 57 | 9 | 10 | 2 | ∞ p. |
| 20 | 33.1 | 23 | 94 | 69 | 8 | 8 | ------ | |
| 21 | 34.6 | 23 | 82 | 48 | 4 | 7 | ------ | |
| 22 | 31.1 | 22 | 90 | 83 | 9 | 10 | .8 | ●° p. |
| 23 | 25.1 | 21 | 84 | 98 | 10 | 10 | 69.9 | ●² a. p. ↙° p. |
| 24 | 30.4 | 22.3 | 97 | 80 | 9 | 10 | 10.4 | ● p. |
| 25 | 31.7 | 21.5 | 90 | 72 | 2 | 9 | 18.5 | ⌈↯² ● p. |
| 26 | 31.1 | 22.9 | 97 | 74 | 5 | 8 | 7.1 | ↯ ● p. |
| 27 | 32.1 | 23 | 97 | 87 | 10 | 9 | 51.8 | ⊤ ● p. |
| 28 | 30.6 | 21.8 | 97 | 73 | 9 | 7 | 19.3 | ● a. p. |
| 29 | 32.4 | 22.5 | 97 | 68 | 6 | 7 | ------ | ⊤ ↯ p. |
| 30 | 31.7 | 22.8 | 97 | 82 | 5 | 9 | 3.5 | ⌈↯ ●° a. p. |
| Mean | 32.7 | 21.9 | 86.6 | 58.9 | 5.1 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 194.5 | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6. a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 33.1 | 19.7 | 77 | 57 | 2 | 4 | ------ | |
| 2 | 32.5 | 18.5 | 94 | 54 | 5 | 4 | ------ | |
| 3 | 31.1 | 19.5 | 82 | 62 | 6 | 6 | ------ | |
| 4 | 34.7 | 22 | 88 | 66 | 5 | 9 | ------ | ↯ p. |
| 5 | 32.3 | 22.2 | 79 | 61 | 7 | 8 | ------ | ○ p. |
| 6 | 33.7 | 20.7 | 84 | 53 | 4 | 4 | ------ | |
| 7 | 33.1 | 21.6 | 69 | 54 | 4 | 2 | ------ | |
| 8 | 34 | 20.5 | 69 | 58 | 2 | 3 | ------ | ↯ p. |
| 9 | 34.8 | 21.7 | 90 | 62 | 4 | 4 | ------ | ⌈↯° p. |
| 10 | 33 | 22.7 | 79 | 64 | 2 | 2 | ------ | ⊕ a. ↯ p. |
| 11 | 33 | 23.5 | 89 | 66 | 7 | 3 | ------ | ⊤ ↯ p. |
| 12 | 32.6 | 23 | 92 | 68 | 2 | 7 | ------ | ⊤ p. |
| 13 | 32.9 | 21.8 | 94 | 63 | 5 | 2 | ------ | ⊤ ↯ d p. |
| 14 | 32.5 | 21.7 | 91 | 66 | 6 | 8 | ------ | ⌈↯ p. |
| 15 | 32 | 19.6 | 94 | 61 | 4 | 3 | ------ | ⊕° ⌈↯° p. |
| 16 | 31.7 | 19.4 | 95 | 57 | 3 | 4 | ------ | |
| 17 | 32 | 21 | 95 | 63 | 5 | 2 | ------ | ≡° a. |
| 18 | 31.5 | 20.4 | 94 | 68 | 5 | 3 | ------ | |
| 19 | 31.6 | 22 | 96 | 70 | 6 | 10 | ------ | ≡° ○° a. ⌈↯ p. |
| 20 | 31.6 | 23.7 | 92 | 72 | 10 | 10 | ------ | ○ a. p. d ⌈↯ p. |
| 21 | 32.8 | 22.2 | 93 | 69 | 10 | 6 | ------ | ⊤ d ↯ p. |
| 22 | 34.2 | 22.5 | 95 | 63 | 8 | 10 | 7.2 | ≡° a. d ● ⌈↯ p. |
| 23 | 28.4 | 22 | 95 | 94 | 10 | 10 | 34.7 | ● d a. p. |
| 24 | 26.8 | 22.9 | 98 | 87 | 10 | 10 | 32.9 | ● a. p. |
| 25 | 30.5 | 22.2 | 93 | 86 | 10 | 10 | 5.8 | p ● ↯ p. |
| 26 | 30.4 | 22.5 | 96 | 79 | 10 | 10 | 32.3 | ⌒ ⊤ d. a. ⌈↯ ● |
| 27 | 30 | 23 | 94 | 88 | 10 | 10 | 33 | ⌒ d a. ● a. p. |
| 28 | 30.3 | 22.3 | 97 | 72 | 10 | 6 | .9 | d a. ↯ p. |
| 29 | 30.7 | 20.9 | 97 | 72 | 5 | 4 | ------ | Ω a. ⌈↯ p. |
| 30 | 31.2 | 22.5 | 97 | 74 | 4 | 4 | ------ | Ω² a. ⌈↯ p. |
| Mean | 32 | 21.6 | 89.9 | 67.6 | 6 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 146.8 | |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | *°C.* | *°C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 35 | 19.5 | 90 | 43 | 2 | 4 | ------ | Ω a. |
| 2 | 37 | 19.4 | 89 | 39 | 4 | 4 | ------ | Ω a. |
| 3 | 36.2 | 19.8 | 95 | 39 | 2 | 4 | ------ | Ω a. |
| 4 | 35.9 | 23.3 | 86 | 39 | 10 | 7 | ------ | d° a. |
| 5 | 36.1 | 20.5 | 94 | 40 | 4 | 8 | ------ | Ω a. |
| 6 | 35.6 | 20.1 | 91 | 42 | 3 | 2 | ------ | Ω a. |
| 7 | 36 | 20.4 | 93 | 42 | 3 | 4 | ------ | Ω a. |
| 8 | 36.2 | 20.2 | 96 | 43 | 2 | 2 | ------ | Ω a. |
| 9 | 36.3 | 20.6 | 95 | 43 | 4 | 3 | ------ | Ω a. |
| 10 | 36.4 | 20.6 | 95 | 43 | 3 | 4 | ------ | Ω a. |
| 11 | 37.1 | 21.5 | 93 | 41 | 4 | 7 | ------ | Ω a. |
| 12 | 37.4 | 22 | 94 | 39 | 4 | 9 | ------ | Ω a. |
| 13 | 37.5 | 22.4 | 95 | 39 | 7 | 9 | 33 | Ω a. ● ⌈↯ d p. |
| 14 | 35.6 | 22.5? | 97 | 44 | 10 | 10 | 1.8 | d° p. |
| 15 | 35 | ------ | 91 | 47 | 7 | 9 | ------ | Ω a. ↯ p. |
| 16 | 36.2 | 21.1 | 93 | 41 | 4 | 9 | 3.8 | Ω a. ● p. |
| 17 | 36.6 | 21.8 | 96 | 42 | 3 | 8 | ------ | Ω a. |
| 18 | 36.4 | 22.4 | 90 | 43 | 2 | 7 | ------ | Ω a. d° p. |
| 19 | 34.5 | 21.6 | 90 | 48 | 3 | 5 | ------ | Ω a. ●° p. |
| 20 | 34.8 | 21.5 | 95 | 47 | 9 | 8 | ------ | |
| 21 | 35.6 | 23 | 96 | 45 | 4 | 5 | ------ | Ω a. d° p. |
| 22 | 35.4 | 22.4 | 95 | 53 | 3 | 7 | ------ | Ω a. |
| 23 | 32 | 21.4 | 95 | 52 | 4 | 9 | 15.2 | Ω a. ● p. |
| 24 | 29.5 | 23.4 | 89 | 68 | 9 | 9 | 3.8 | ● p. |
| 25 | 33 | 22 | 96 | 43 | 4 | 10 | 29.2 | Ω a. ● p. |
| 26 | 32.5 | 23 | 94 | 70 | 2 | 10 | 5.1 | Ω a. ⌒ ● p. |
| 27 | 30 | 23 | 96 | 68 | 6 | 10 | 22.9 | Ω a. ● p. |
| 28 | 33 | 22.5 | 89 | 62 | 7 | 9 | 1.3 | ● p. |
| 29 | 34 | 22.5 | 96 | 49 | 3 | 4 | ------ | Ω a. |
| 30 | 33.5 | 23 | 94 | 50 | 6 | 9 | ------ | Ω a. ↯ p. |
| Mean | 35 | 21.6? | 93.3 | 46.8 | 4.6 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 116.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | ------ | 21.3 | 94 | 66 | 3 | 2 | ------ | Ω a. |
| 2 | ------ | 23.4 | 79 | 66 | 9 | 8 | ------ |  |
| 3 | ------ | 20.4 | 91 | 68 | 10 | 10 | 67.1 | d ●$^{2}$ p. |
| 4 | ------ | 22.9 | 96 | 91 | 10 | 10 | 28.2 | ● a. p. |
| 5 | ------ | 22.7 | 89 | 75 | 10 | 8 | ------ | ● a. |
| 6 | ------ | 20.9 | 95 | 68 | 5 | 3 | .8 | Ω ∞ d a. |
| 7 | ------ | 20.5 | 94 | 74 | 2 | 10 | ------ | Ω° ∞ d a. |
| 8 | ------ | 21.3 | 95 | 75 | 9 | 10 | 10.2 | Ω a. d a. p. ● p. |
| 9 | ------ | 23.1 | 97 | 93 | 10 | 10 | 12.4 | ● a. p. ⌒ p. |
| 10 | ------ | 21.5 | 98 | 77 | 7 | 1 | .8 | d a. |
| 11 | ------ | 22.5 | 96 | 76 | 0 | 9 | ------ | Ω° a. T ↯ ● p. |
| 12 | ------ | 22.2 | 96 | 76 | 0 | 1 | ------ | Ω ∞ a. ⊖ p. |
| 13 | ------ | 22.1 | 96 | 76 | 10 | 1 | 1.3 | Ω ⌒ d a. ↯ ⊖ p. |
| 14 | ------ | 21.2 | 95 | 70 | 0 | 1 | ------ | ↯ ⊖ p. |
| 15 | ------ | 23.2 | 97 | 75 | 7 | 6 | 3.3 | T ● p. |
| 16 | ------ | 23.2 | 96 | 77 | 10 | 10 | 91.4 | Ω$^{2}$ ∞° a. ●$^{2}$ p. |
| 17 | ------ | 23.2 | 96 | 73 | 10 | 5 | 11.9 | Ω° ∞$^{2}$ a. ● ↯ T p. |
| 18 | ------ | 22.2 | 96 | 74 | 10 | 10 | 1.8 | Ω ∞° a. d° p. |
| 19 | ------ | 23.2 | 94 | 70 | 10 | 9 | ------ | Ω ∞° d a. |
| 20 | ------ | 23.9 | 94 | 80 | 10 | 10 | .8 | d a. p. |
| 21 | ------ | 23.9 | 93 | 73 | 10 | 9 | ------ | Ω ∞° a. |
| 22 | ------ | 23.6 | 91 | 77 | 9 | 9 | ------ | d a. p. |
| 23 | ------ | 23.4 | 93 | 87 | 10 | 10 | 62.8 | ● a. p. ↙° p. |
| 24 | ------ | 23.7 | 96 | 82 | 9 | 6 | 12.7 | Ω ∞° ⌒ a. d a. p. |
| 25 | ------ | 22 | 96 | 66 | 10 | 5 | ------ | ↯ T p. |
| 26 | ------ | 23.7 | 92 | 62 | 10 | 5 | ------ | Ω ∞° a. T ↯° p. |
| 27 | ------ | 24.1 | 91 | 83 | 10 | 9 | 22.6 | d$^{2}$ a. ● p. |
| 28 | ------ | 23.4 | 92 | 76 | 10 | 10 | ------ | ↯ p. |
| 29 | ------ | 23.1 | 93 | 62 | 8 | 1 | 1.5 | Ω ∞° a. ● ↯° T p. |
| 30 | ------ | 24.7 | 95 | 74 | 10 | 9 | 3.6 | ● T d p. |
| Mean | ------ | 22.7 | 93.9 | 74.7 | 7.9 | 6.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 333.2 |  |

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 34 | 20.9 | 95 | 59 | 1 | 1 | ------ |  |
| 2 | 34 | 22 | 92 | 59 | 1 | 2 | ------ |  |
| 3 | 31.7 | 21.7 | 90 | 64 | 1 | 2 | ------ |  |
| 4 | 32.2 | 23.6 | 89 | 56 | 4 | 6 | ------ | ↙° d° ↯° p. |
| 5 | 32.6 | 22.5 | 92 | 65 | 1 | 8 | ------ | ⊖$^{2}$ p. |
| 6 | 34 | 22.8 | 75 | 64 | 1 | 1 | ------ |  |
| 7 | 34.2 | 21.3 | 88 | 44 | 1 | 1 | ------ |  |
| 8 | 33 | 23 | 76 | 55 | 1 | 2 | ------ |  |
| 9 | 33.5 | 24.2 | 85 | 65 | 1 | 2 | ------ |  |
| 10 | 35 | 22.6 | 95 | 61 | 1 | 2 | ------ |  |
| 11 | 34.3 | 24.2 | 88 | 66 | 1 | 1 | ------ |  |
| 12 | 32.6 | 25 | 80 | 65 | 2 | 1 | ------ |  |
| 13 | 35.5 | 23.4 | 80 | 52 | 1 | 1 | ------ |  |
| 14 | 32.2 | 23 | 79 | 63 | 1 | 2 | ------ |  |
| 15 | 32.4 | 22.3 | 82 | 63 | 2 | 3 | ------ |  |
| 16 | 32.1 | 23.2 | 82 | 60 | 3 | 2 | ------ |  |
| 17 | 32.4 | 23.2 | 85 | 62 | 1 | 5 | ------ |  |
| 18 | 33 | 22.4 | 85 | 59 | 4 | 3 | ------ |  |
| 19 | 33.2 | 23.8 | 83 | 64 | 2 | 4 | ------ |  |
| 20 | 34.7 | 23.4 | 87 | 57 | 2 | 5 | ------ | T$^{2}$ p. |
| 21 | 34.1 | 24 | 85 | 69 | 5 | 2 | ------ | T° p. |
| 22 | 34 | 25.4 | 84 | 63 | 2 | 5 | ------ |  |
| 23 | 33 | 24.5 | 77 | 67 | 6 | 9 | ------ | d° p. |
| 24 | 28 | 24 | 88 | 92 | 6 | 10 | 3.5 | ●° p. |
| 25 | 30.4 | 22.9 | 90 | 72 | 10 | 10 | 20.8 | T ●$^{2}$ p. |
| 26 | 30.7 | 22.5 | 79 | 62 | 1 | 7 | 25.9 | ●$^{2}$ ⛈$^{2}$ p, |
| 27 | 31.4 | 23.4 | 83 | 72 | 7 | 10 | 31.2 | ●$^{2}$ p. |
| 28 | 31.5 | 22.4 | 80 | 68 | 5 | 3 | ------ |  |
| 29 | 32.3 | 22.7 | 80 | 59 | 2 | 1 | ------ | ⌒$^{2}$ a. ↯$^{2}$ p. |
| 30 | 33.4 | 22 | 77 | 54 | 1 | 1 | ------ | ↯$^{2}$ p. |
| Mean | 32.8 | 23.1 | 84.4 | 62.7 | 2.6 | 3.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 81.4 |  |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.9 | 18.8 | 98 | 49 | 10 | 4 | ------ | Ω$^{2}$ a. |
| 2 | 32.8 | 20.2 | 97 | 47 | 8 | 4 | ------ | Ω$^{2}$ ≡ a. |
| 3 | 31.1 | 19.2 | 97 | 52 | 3 | 4 | 4.3 | Ω$^{2}$ ≡ a. d$^{2}$ p. |
| 4 | 31.8 | 21.8 | 97 | 63 | 9 | 9 | 7.9 | d$^{2}$ a. p. ↯° p. |
| 5 | 32.7 | 22 | 97 | 52 | 10 | 4 | ------ | ⊕$^{2}$ a. |
| 6 | 32.9 | 18.8 | 98 | 52 | 4 | 5 | ------ | Ω$^{2}$ ≡ a. |
| 7 | 31 | 18.4 | 97 | 57 | 2 | 7 | ------ | Ω$^{2}$ ≡ a. |
| 8 | 32.8 | 20.2 | 97 | 52 | 1 | 6 | ------ | Ω$^{2}$ ≡ ⊕° a. |
| 9 | 32.1 | 21.2 | 96 | 64 | 8 | 8 | 1.8 | Ω° d$^{2}$ T° a. ⛈° d° |
| 10 | 34.9 | 21.6 | 97 | 48 | 7 | 4 | 6.4 | ≡ a. ⛈° d$^{2}$ p. |
| 11 | 35.5 | 21.3 | 99 | 48 | 4 | 3 | 3.3 | ●° ≡$^{2}$ a. ⛈° d$^{2}$ p. |
| 12 | 34 | 23.2 | 98 | 54 | 10 | 4 | ------ | ⛈° d° ⊖$^{2}$ p. |
| 13 | 34.8 | 21.6 | 97 | 48 | 3 | 2 | ------ | Ω$^{2}$ a. ⛈° d° ⊖° |
| 14 | 34.8 | 20 | 98 | 47 | 8 | 3 | 48 | ≡ a. ●$^{2}$ ⛈° p. |
| 15 | 32.5 | 23.3 | 97 | 57 | 10 | 3 | 39.4 | ●$^{2}$ ⛈° p. |
| 16 | 31.7 | 22.1 | 96 | 64 | 10 | 3 | ------ |  |
| 17 | 33 | 22 | 97 | 57 | 10 | 2 | 29.5 | Ω$^{2}$ a. ⛈° ●$^{2}$ p. |
| 18 | 29.2 | 22.6 | 97 | 71 | 10 | 10 | 2.3 | d° a. p. d$^{2}$ p. |
| 19 | 29.8 | 20.8 | 97 | 70 | 10 | 9 | ------ | ⊕° a. p. T° ↯° p. |
| 20 | 31.3 | 23.6 | 97 | 75 | 10 | 10 | 10.5 | d$^{2}$ T° a. ● T° ↯° |
| 21 | 33.2 | 22.4 | 98 | 56 | 9 | 8 | ------ | ⊕$^{2}$ a. |
| 22 | 31.7 | 21.4 | 97 | 66 | 8 | 8 | ------ | Ω$^{2}$ ⊕$^{2}$ a. d° ↯ p. |
| 23 | 29.7 | 21.9 | 98 | 86 | 10 | 10 | 16 | d$^{2}$ T° a. p. |
| 24 | 32.4 | 22.7 | 98 | 62 | 8 | 6 | 1.8 | ⌒° d$^{2}$ ⊕ a. d$^{2}$ T° ↯° |
| 25 | 34.6 | 21.8 | 97 | 56 | 8 | 6 | 8.9 | Ω$^{2}$ a. ⛈° ●° p. |
| 26 | 34.1 | 22.7 | 98 | 58 | 7 | 7 | 21.6 | T° a. ⌒ ⛈° ●$^{2}$ ↯° |
| 27 | 31.8 | 23.7 | 98 | 70 | 10 | 9 | 39.9 | d° T° a. p. ● ⌒$^{2}$ p. |
| 28 | 32.2 | 21.3 | 98 | 64 | 10 | 5 | 10.2 | ●° d a. ⛈° ● p. |
| 29 | 32.8 | 22.9 | 98 | 58 | 10 | 3 | ------ | ⛈° p. |
| 30 | 33.7 | 24.1 | 97 | 60 | 10 | 4 | 22.9 | ●° ⛈ p. |
| Mean | 32.6 | 21.6 | 97.4 | 58.8 | 7.9 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 274.7 |  |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.4 | 22 | 78 | 54 | 1 | 0 | ------ | Ω$^{2}$ a. |
| 2 | 30.6 | 22.8 | 79 | 63 | 1 | 1 | ------ | Ω$^{2}$ a. |
| 3 | 30.3 | 22.9 | 78 | 60 | 3 | 2 | ------ | Ω$^{2}$ a. |
| 4 | 31.4 | 24.5 | 76 | 64 | 9 | 4 | ------ | Ω° a. T° d ⊖ p. |
| 5 | 31.3 | 23.5 | 82 | 60 | 2 | 4 | ------ | Ω a. T° ⊖$^{2}$ p. |
| 6 | 31.7 | 23.1 | 82 | 55 | 4 | 0 | ------ | Ω° a. ⊖$^{2}$ p. |
| 7 | 31.1 | 23 | 79 | 64 | 3 | 2 | ------ | Ω a. |
| 8 | 31.2 | 23.5 | 84 | 62 | 5 | 0 | ------ | Ω a. |
| 9 | 31.6 | 23.5 | 76 | 67 | 2 | 3 | ------ | Ω a. ↯ p. |
| 10 | 32.5 | 24.5 | 80 | 61 | 0 | 4 | ------ | Ω a. |
| 11 | 32.4 | 24.5 | 83 | 64 | 8 | 0 | ------ | T° a. d p. |
| 12 | 31.9 | 24.7 | 79 | 65 | 2 | 0 | ------ | Ω a. |
| 13 | 32.2 | 23.5 | 83 | 66 | 3 | 2 | ------ | Ω a. |
| 14 | 31.3? | 24 | 83 | 63 | 3 | 0 | ------ | Ω a. |
| 15 | 30.4 | 22.9 | 87 | 65 | 0 | 5 | ------ | Ω$^{2}$ a. ⊕ a. p. |
| 16 | 31.2 | 22.7 | 87 | 59 | 0 | 0 | ------ | Ω$^{2}$ a. |
| 17 | 31.2 | 24.5 | 84 | 65 | 2 | 3 | ------ | ⊕ a. p. ↯ p. |
| 18 | 31 | 24.5 | 82 | 72 | 4 | 2 | ------ |  |
| 19 | 31.7 | 25.6 | 73 | 68 | 4 | 9 | ------ | ↯ p. |
| 20 | 31.4 | 24.5 | 83 | 71 | 5 | 8 | ------ | T° d p. |
| 21 | 32.4 | 25.2 | 88 | 72 | 9 | 8 | ------ | Ω° a. |
| 22 | 31.9 | 25.1 | 84 | 71 | 9 | 6 | ------ | Ω° a. ⛈° d p. |
| 23 | 33.5 | 25.2 | 88 | 66 | 9 | 8 | ------ | Ω a. |
| 24 | 31.9 | 25.2 | 84 | 72 | 7 | 9 | 8.4 | ● p. |
| 25 | 28.7 | 24.7 | 88 | 81 | 8 | 9 | 1.3 | d p p. |
| 26 | 31.2 | 24.5 | 92 | 75 | 4 | 5 | 11.9 | ⛈° ● p. |
| 27 | 29.8 | 25.4 | 92 | 77 | 9 | 8 | 42.4 | ● ⌒° a. T° ● p. |
| 28 | 30.1 | 24 | 92 | 78 | 9 | 7 | ------ |  |
| 29 | 31.1 | 24 | 91 | 75 | 6 | 4 | ------ | Ω a. ↯ p. |
| 30 | 31.4 | 24 | 92 | 69 | 0 | 1 | ------ | Ω$^{2}$ a. ↯ p. |
| Mean | 31.3 | 24.1 | 83.6 | 66.8 | 4.4 | 3.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 64 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### LAOAG.

[φ=18° 12′ N; λ=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.1 | 20.6 | 94 | 64 | 0 | 4 | ------ | Ω² a. |
| 2 | 33.3 | 20.3 | 87 | 53 | 0 | 2 | ------ | Ω² a. |
| 3 | 34.5 | 19.8 | 84 | 48 | 2 | 4 | ------ | Ω a. |
| 4 | 34.8 | 21.5 | ------ | 58 | 1 | 5 | ------ | Ω a. ⊤ ↯ p. |
| 5 | 34.2 | 22.4 | 87 | 52 | 0 | 3 | ------ | ⊤ p. |
| 6 | 33.8 | 22.5 | 87 | 61 | 0 | 6 | ------ | ≡° a. |
| 7 | 34.9 | 21.9 | 88 | 53 | 0 | 6 | ------ | Ω a. ⊤ p. |
| 8 | 33.3 | 22.9 | 90 | 65 | 3 | 5 | ------ | Ω a. |
| 9 | 33.8 | 22.8 | 87 | 57 | 3 | 4 | ------ | Ω a. |
| 10 | 34.9 | 23 | 89 | 56 | 0 | 2 | ------ | Ω² a. |
| 11 | 34 | 25.3 | 85 | 63 | 0 | 5 | ------ | Ω a. |
| 12 | 34.1 | 22.3 | 92 | 48 | 0 | 1 | ------ | Ω² a. |
| 13 | 35.3 | 22.1 | 87 | 55 | 0 | 2 | ------ |  |
| 14 | 31.9 | 22.4 | 90 | 62 | 0 | 2 | ------ | Ω a. |
| 15 | 33.7 | 21.2 | 89 | 50 | 0 | 5 | ------ | Ω² a. |
| 16 | 33.2 | 21 | 90 | 52 | 0 | 4 | ------ | Ω a. |
| 17 | 33.5 | 22.6 | 86 | 67 | 0 | 7 | ------ | Ω° a. |
| 18 | 36.3 | 24.3 | 80 | 43 | 9 | 7 | ------ |  |
| 19 | 34.8 | 22.5 | 79 | 54 | 1 | 6 | ------ | Ω° a. |
| 20 | 35.2 | 23 | 85 | 57 | 0 | 3 | ------ | d° p. |
| 21 | 34 | 25 | 91 | 59 | 6 | 6 | ------ |  |
| 22 | 34.3 | 23.3 | 89 | 48 | 3 | 4 | ------ | Ω² a. |
| 23 | 39 | 22.5 | 87 | 36 | 5 | 6 | ------ | Ω² a. |
| 24 | 34.4 | 25.5 | 86 | 71 | 7 | 7 | 13.7 | d° ⌈↯ ● p. |
| 25 | 30.4 | 22.6 | 97 | 63 | 10 | 10 | 1.8 | ● a. d° p. |
| 26 | 33.3 | 24 | 90 | 69 | 9 | 8 | 6.4 | ⊤ ● p. |
| 27 | 32.1 | 23.7 | 96 | 63 | 9 | 9 | 20.3 | ● p. |
| 28 | 30.3 | 23.2 | 94 | 68 | 9 | 6 | 2.5 | ● a. |
| 29 | 32.1 | 22.6 | 90 | 66 | 9 | 7 | ------ |  |
| 30 | 32.6 | 23 | 95 | 59 | 0 | 3 | ------ | Ω² ≡° a. |
| Mean | 33.8 | 22.7 | 88.7 | 57.3 | 2.9 | 5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 44.7 |  |

### SANTO DOMINGO.

[φ=20° 28′ N; λ=121° 59′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.5 | 21.2 | 86 | 64 | 1 | 5 | ------ | d° p. |
| 2 | 28 | 20.3 | 78 | 60 | 3 | 4 | ------ |  |
| 3 | 27.3 | 22.5 | 82 | 73 | 5 | 4 | ------ |  |
| 4 | 28.6 | 22.8 | 73 | 66 | 4 | 6 | ------ | ⊍² p. |
| 5 | 28.5 | 23.7 | 86 | 69 | 7 | 7 | ------ |  |
| 6 | 28.7 | 23.1 | 82 | 64 | 3 | 4 | ------ |  |
| 7 | 28.2 | 22.3 | 78 | 64 | 3 | 4 | ------ | d° a. |
| 8 | 28.4 | 23.5 | 81 | 79 | 7 | 10 | 0.8 | ●° p. |
| 9 | 29.4 | 22.5 | 85 | 67 | 8 | 3 | ------ |  |
| 10 | 30.5 | 23.6 | 88 | 80 | 7 | 7 | ------ |  |
| 11 | 30.2 | 25.2 | 90 | 72 | 8 | 4 | 4.8 | ● p. |
| 12 | 28.1 | 22.9 | 86 | 76 | 10 | 7 | .3 | ●° a. |
| 13 | 29.7 | 24.4 | 83 | 77 | 6 | 10 | 13 | ● d ⌈↯ p. |
| 14 | 28.3 | 22 | 91 | 74 | 6 | 4 | ------ | v a. |
| 15 | 27.7 | 22.4 | 81 | 68 | 3 | 7 | ------ |  |
| 16 | 29 | 21.8 | 81 | 68 | 2 | 4 | 4.6 | Ω v a. |
| 17 | 26.8 | 22.2 | 86 | 90 | 2 | 10 | 52.3 | ● d a. p. |
| 18 | 21.5 | 17.9 | 86 | 77 | 10 | 10 | 2.8 | d a. p. ● p. |
| 19 | 25.3 | 18.8 | 78 | 83 | 10 | 8 | 2.5 | ● p. |
| 20 | 25.8 | 22.5 | 93 | 86 | 10 | 10 | 2.3 | d ⌒ a. |
| 21 | 28.9 | 23.1 | 91 | 80 | 7 | 8 | .4 | ● a. ●° p. |
| 22 | 30.2 | 23.8 | 90 | 73 | 3 | 6 | ------ |  |
| 23 | 29.2 | 24.4 | 87 | 71 | 3 | 3 | 2.9 | d° ●° p. |
| 24 | 29.4 | 24.8 | 94 | 82 | 8 | 9 | 9.4 | ● d p. |
| 25 | 27.9 | 24.1 | 95 | 84 | 10 | 9 | 15.5 | ● d a. p. ⊤ p. |
| 26 | 29.4 | 24.2 | 92 | 75 | 8 | 2 | 5.1 | ● p. |
| 27 | 27.9 | 23.3 | 89 | 87 | 8 | 10 | ------ |  |
| 28 | 28 | 23.5 | 83 | 76 | 9 | 8 | ------ | d° p. |
| 29 | 28.4 | 23.3 | 89 | 75 | 2 | 3 | ------ | v a. |
| 30 | 29.3 | 23.8 | 86 | 71 | 3 | 3 | ------ | Ω° p. |
| Mean | 28.2 | 22.8 | 85.7 | 74.4 | 5.9 | 6.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 116.7 |  |

# SEISMOLOGICAL BULLETIN FOR APRIL, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
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## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, 19$^h$ 5$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

3, 22$^h$ 0$^m$. **Surigao** (NE of Mindanao). Earthquake of intensity II.

7, 14$^h$ 25$^m$. **Batangas** (S of Luzon). Oscillatory earthquake of intensity III lasting 4 seconds. Its origin was near the southern coast of Luzon, probably within the strait separating that island from Mindoro.

10, 16$^h$ 52$^m$. **Surigao** (NE of Mindanao). Earthquake of intensity V and 6 seconds' duration. The shocks observed were almost exclusively vertical.

11, 2$^h$ 30$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

13, 8$^h$ 48$^m$. **Guam** (Mariana Islands). Earthquake of intensity III. Its origin was probably east of the Mariana Islands and the disturbance is undoubtedly identical with the one registered by the Manila seismographs at 8$^h$ 54$^m$ 22$^s$, and by those of Osaka (Japan) at 8$^h$ 54$^m$ 16$^s$. The epicenter was at a distance of about 3,000 kilometers from either station.

14, 20$^h$ 12$^m$ 12$^s$.* **Batangas** (S of Luzon). Oscillatory earthquake. Direction NW–SE, intensity III, duration 15 seconds. It seems to have originated in Taal Volcano.

18, 0$^h$ 6$^m$. **Guam** (Mariana Islands). Earthquake of intensity III and very short duration.

18, 12$^h$ 25$^m$. **Talacogon** (Agusan Valley, Mindanao). Earthquake of intensity III.

20, 15$^h$ 26$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

21, 5$^h$ 17$^m$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction N–S, intensity III, duration 15 seconds.

21, 10$^h$ 30$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

24, 15$^h$ 55$^m$ 6$^s$.* **Batangas** (S of Luzon). Earthquake of intensity III and very short duration, having its epicenter in Taal Volcano.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

## RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0h.]

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 66 | 1 | $I_r$ | V. | 6 06 13 | ---------- | ---------- | ---------- | ------ | ------ | 6 30 | |
| | | | H. WSW | 6 06 13 | ---------- | 6 10 17 | 6 12 42 | 0.15 | 9. | 6 37 | |
| | | | W. E | 6 06 13 | ---------- | 6 10 20 | 6 11 40 | .01 | 6. | 6 20 | |
| 67 | 1 | $I_r$ | V. | ---------- | 10 20 55 | 10 24 05 | 10 25 02 | .01 | 5. | 10 36 | Vertical Component 0.01 mm. |
| | | | H. WSW | ---------- | 10 20 56 | 10 24 04 | 10 25 23 | .03 | 8.4 | 10 39 | |
| | | | W. N | ---------- | 10 21 09 | 10 24 33 | 10 25 44 | .01 | 9.6 | 10 35 | |
| | | | W. E | ---------- | 10 21 09 | 10 24 33 | 10 25 37 | .02 | .6 | 10 36 | |
| 68 | 3 | $I_v$ | V. | 9 05 40 | ---------- | ---------- | ---------- | ------ | ------ | 9 19 | V. C. 0.01 mm. |
| | | | H. WSW | 9 05 40 | ---------- | 9 09 36 | 9 09 55 | .03 | 9.3 | 9 20 | |
| | | | W. E | 9 05 40 | ---------- | 9 09 36 | 9 09 46 | .03 | 6.6 | 9 19 | |
| 69 | 4 | $I_d$ | V. | 3 06 01 | ---------- | 3 06 14 | 3 06 42 | .01 | 2.4 | 3 09 | |
| 70 | 4 | $I_d$ | V. | 22 45 49 | ---------- | 22 46 01 | 22 46 16 | .02 | 2 | 22 48 | V. C. 0.01 mm. |
| 71 | 7 | $I_d$ | V. | ---------- | ---------- | 5 09 30 | 5 09 34 | .01 | 2.4 | 5 11 | V. C. 0.01 mm. |
| 72 | 7 | $I_d$ | V. | ---------- | ---------- | 13 33 46 | 13 34 15 | .06 | 2.4 | 13 37 | V. C. 0.02 mm. |
| 73 | 7 | $I_u$ | V. | 14 53 52 | ---------- | ---------- | ---------- | ------ | ------ | 15 39 | |
| | | | H. NNW | 14 53 52 | 15 00 47 | 15 07 51 | ---------- | ------ | ------ | 15 20 | |
| | | | H. WSW | 14 53 51 | 15 00 59 | 15 07 58 | 15 15 01 | .03 | 8.4 | 15 53 | |
| 74 | 7 | $I_d$ | V. | 18 05 48 | ---------- | 18 06 12 | 18 06 21 | .30 | 2.4 | 18 11 | V. C. 0.06 mm. |
| 75 | 11 | $I_u$ | V. | 3 02 13 | ---------- | ---------- | ---------- | ------ | ------ | 3 27 | Colombia? |
| | | | H. WSW | 3 02 10 | ---------- | ---------- | ---------- | ------ | ------ | 3 46 | |
| | | | W. E | 3 02 11 | ---------- | ---------- | ---------- | ------ | ------ | 3 36 | |
| 76 | 11 | $I_r$ | W. N | 21 41 20 | ---------- | ---------- | ---------- | ------ | ------ | 22 20 | |
| 77 | 13 | $I_r$ | V. | 8 54 22 | ---------- | 8 58 34 | 8 59 05 | .02 | 6.4 | 9 23 | Earthquake, III at Guam (Marianas Islands). |
| | | | H. NNW | 8 54 27 | ---------- | 8 58 20 | 8 59 11 | .11 | 7.2 | 9 15 | |
| | | | H. WSW | 8 54 26 | ---------- | 8 58 44 | 9 01 59 | .14 | 7.8 | 9 30 | |
| | | | W. N | 8 54 22 | ---------- | 8 58 18 | 8 59 00 | .05 | 4.2 | 9 32 | |
| | | | W. E | 8 54 22 | ---------- | 8 58 55 | 9 01 24 | .04 | 6.4 | 9 38 | |
| 78 | 14 | $II_v$ | V. | 20 12 12 | ---------- | 20 12 29 | 20 13 00 | 1.80 | 2.2 | 20 24 | V. C. 2.02 mm. Eqke., III at Batangas (S of Luzon). |
| 79 | 15 | $I_d$ | V. | 8 25 06 | ---------- | 8 25 12 | 8 25 17 | .03 | 2.4 | 8 28 | V. C. 0.02 mm. |
| 80 | 15 | I | V. | ---------- | ---------- | 20 04 35 | ---------- | ------ | ------ | 20 24 | |
| | | | H. WSW | ---------- | ---------- | 20 04 16 | ---------- | ------ | ------ | 20 33 | |
| 81 | 17 | $I_d$ | V. | 3 20 53 | ---------- | 3 21 19 | 3 21 42 | .40 | 2.4 | 3 26 | V. C. 0.22 mm. |
| 82 | 19 | $I_u$ | V. | 2 24 43 | 2 32 26 | 2 40 18 | 2 54 34 | .01 | 17.6 | 3 32 | |
| | | | H. WSW | 2 24 49 | 2 32 24 | 2 39 11 | 2 54 35 | .06 | 19.2 | 3 41 | |
| 83 | 19 | I | H. WSW | ---------- | ---------- | 22 22 19 | ---------- | ------ | ------ | 23 02 | |
| 84 | 22 | $I_d$ | V. | 4 42 26 | ---------- | 4 42 35 | 4 42 49 | .22 | 2.4 | 4 47 | V. C. 0.12 mm. |
| 85 | 24 | $I_v$ | V. | 15 55 06 | ---------- | 15 55 13 | 15 55 31 | .09 | 2.4 | 15 59 | V. C. 0.04 mm. Eqke., III at Batangas (S of Luzon). |
| 86 | 28 | I | V. | 18 11 24 | ---------- | ---------- | ---------- | ------ | ------ | 18 55 | V. C. 0.01 mm. |
| | | | H. WSW | 18 11 21 | ---------- | ---------- | ---------- | ------ | ------ | 19 06 | |
| 87 | 29 | I | H. WSW | 2 45 59 | ---------- | ---------- | ---------- | ------ | ------ | 3 11 | |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal Pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8 seconds; WSW–ENE pendulum, T=8.6 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the gound and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.), 1000 kilograms; N=N—S component; E=E—W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above the sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, 19$^h$ 5$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

3, 22$^h$ 0$^m$. **Surigao** (NE de Mindanao). Temblor de tierra de intensidad II.

7, 14$^h$ 25$^m$. **Batangas** (S de Luzón). Temblor oscilatorio de intensidad III, duración 4 segundos. Su origen se hallaba cerca de la costa sur de Luzón, probablemente en el estrecho que la separa de la Isla de Mindoro.

10, 16$^h$ 52$^m$. **Surigao** (NE de Mindanao). Temblor de tierra de intensidad V, duración 6 segundos. Los choques observados fueron casi exclusivamente verticales.

11, 2$^h$ 30$^m$. **Sarangani** (S. de Mindanao). Temblor de tierra de intensidad II.

13, 8$^h$ 48$^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad III. El origen de este temblor se hallaba probablemente al E de las Islas Marianas, y es sin duda el registrado por los seismógrafos de Manila á 8$^h$ 54$^m$ 22$^s$ y por los de Osaka (Japón) á 8$^h$ 54$^m$ 16$^s$. El epicentro distaba unos 3000 kilómetros de ambas estaciones.

14, 20$^h$ 12$^m$ 12$^s$.* **Batangas** (S de Luzón). Temblor oscilatorio. Intensidad III, dirección NW–SE, duración 15 segundos. Su origen parece se hallaba en el volcán de Taal.

18, 0$^h$ 6$^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad III; duración muy corta.

18, 12$^h$ 25$^m$. **Talacogon** (Valle del Agusan, Mindanao). Temblor de tierra de intensidad III.

20, 15$^h$ 26$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

21, 5$^h$ 17$^m$. **Butúan** (N de Mindanao). Temblor oscilatorio. Dirección N–S, intensidad III, duración 15 segundos.

21, 10$^h$ 30$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

24, 15$^h$ 55$^m$ 6$^s$.* **Batangas** (S de Luzón). Temblor de tierra de intensidad III y de cortísima duración. El epicentro se hallaba en el volcán de Taal.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

# BULLETIN FOR MAY, 1911.

# METEOROLOGICAL BULLETIN FOR MAY, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The mean atmospheric pressure of the month exceeded that of May of the preceding year in all the stations throughout the Philippines, but especially on Luzon Island. The highest pressures were recorded on the 5th and the lowest on the 24th or 29th of the month. For Manila, the monthly mean is almost identical with the normal mean for May.

The monthly mean temperature was slightly below that of the same month of 1910 in the Visayan Islands, but a little higher in northern Luzon; while in the southern part of that island it was practically equal to that of May, 1910, in some places, but slightly lower in others. As regards Manila, the monthly mean differed from the normal for May by –1.1° C. The extreme temperatures registered at the Central Observatory were: 35° C on the 25th, and 21.7° C on the 8th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR MAY, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from May, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from May, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Surigao | 758.29 | +0.52 | 759.90 | 5 | 757.17 | 24 | 27.1 | ---------- | 33 | 9 | 22.3 | 23 |
| Cebu | 58.12 | + .36 | 60.03 | 5 | 56.80 | 24 | 27.5 | —0.1 | 33.8 | 28 | 21.8 | 7 |
| Iloilo | 58.19 | + .14 | 60.06 | 5 | 56.70 | 24 | 27.2 | — .4 | 34.1 | 21, 22 | 22.2 | 2 |
| Ormoc | 58.34 | + .37 | 60.12 | 5 | 57 | 24 | 25.8 | — .5 | 32.2 | 24 | 21 | 3 |
| Tacloban | 58.79 | + .44 | 60.45 | 5 | 57.63 | 24 | 27.4 | — .2 | 35.8 | 30 | 22.8 | 15 |
| Capiz | 58.29 | ---------- | 60.36 | 5 | 56.66 | 24 | 27.3 | ---------- | 35.4 | 27 | 21.9 | 4 |
| Calbayog | 58.46 | + .65 | 60.22 | 5 | 57.18 | 24 | 26.5 | — .4 | 33.1 | 28 | 22.2 | 18 |
| Legaspi | 58.42 | + .68 | 60.45 | 5 | 57.07 | 24 | 27.8 | + .1 | 35.9 | 30 | 21 | 8, 19 |
| Atimonan | 58.47 | + .95 | 60.53 | 5 | 57.06 | 29 | 27.3 | — .8 | 35.4 | 30 | 21.4 | 8 |
| Paracale | 58.59 | ---------- | 60.65 | 5 | 57.15 | 29 | 27.5 | ---------- | 35.2 | 30 | 22.9 | 8 |
| Manila | 58.35 | + .77 | 60.25 | 5 | 56.85 | 24 | 27.4 | 0 | 35 | 25 | 21.7 | 8 |
| San Isidro | 58.22 | + .79 | 60.16 | 5 | 56.70 | 24 | 27.6 | — .1 | 35.3 | 23 | 21.4 | 17 |
| Dagupan | 58.05 | + .80 | 59.78 | 5 | 56.53 | 24 | 28.3 | + .6 | 37 | 4 | 22.6 | 7, 8 |
| Bolinao | 57.93 | + .90 | 59.76 | 5 | 56.45 | 24 | 28.2 | + .5 | 34.1 | 3, 14, 27 | 22.7 | 3 |
| Baguio[1] | 636.44 | + .85 | 638.03 | 5 | 635.43 | 24 | 18.5 | + .4 | 25.2 | 25 | 15.2 | 3 |
| Vigan | 757.98 | + .78 | 759.78 | 5 | 756.48 | 24 | 28.3 | + .8 | 34.8 | 31 | 22 | 8 |
| Tuguegarao | 58.34 | +1.17 | 60.20 | 5 | 56.33 | 29 | 27.8 | + .4 | 36 | 5 | 20.5 | 3 |
| Aparri | 58.36 | + .92 | 60.32 | 5 | 56.06 | 29 | 27 | + .3 | 34.6 | 26 | 21.2 | 3 |

[1] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—For nearly all the stations in northern and central Luzon the total rainfall during May, 1911, was less than during the corresponding month of 1910; while those in southern Luzon and Mindanao generally report an excess over same. The stations located in the Visayas show less uniformity, some reporting a greater, others a less amount of precipitation than had been recorded during May, 1910. The total amount of rain registered by the rain gauges of Manila Observatory was 132 millimeters, which surpasses the normal for May by 19.4 millimeters.

## RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MAY, 1911.

| Station. | Total. | Departure from May, 1910. | Rainy days. | Departure from May, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from May, 1910. | Rainy days. | Departure from May, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *mm.* |  |  | *mm.* |  |  | *mm.* | *mm.* |  |  | *mm.* |  |
| Jolo | 123 | — 57 | 19 | + 9 | 28.9 | 10 | Calapan | 158.1 | + 55.6 | 14 | + 1 | 49.3 | 4 |
| Isabela, Basilan | 224.8? | +183.7 | 19 | +12 | 52.5 | 14 | Virac | 280.3 | + 217.8 | 19 | +10 | 38.5 | 2 |
| Zamboanga | 71 | + 33.6 | 9 | + 2 | 20.3 | 18 | Nueva Caceres | 186.9 | + 90.2 | 14 | + 2 | 41.1 | 5 |
| Davao | 252.3 | —294 | 12 | — 6 | 33.5 | 27 | Batangas | 89.4 | — 27.3 | 8 | — 1 | 29.2 | 31 |
| Cotabato | 336.2 | +155.4 | 23 | + 9 | 57.1 | 30 | Atimonan | 189.6 | + 73.6 | 15 | + 2 | 50.6 | 31 |
| Dapitan | 139.5 | + 56.7 | 12 | + 6 | 48 | 11 | Silang | 246.6 | + 3.2 | 16 | + 4 | 42.2 | 8 |
| Butuan | 131.3 | + 21.1 | 18 | + 4 | 47.2 | 11 | Paracale | 261.9 | -------- | 16 | ----- | 108.6 | 2 |
| Dumaguete | 86 | + 70.2 | 9 | + 1 | 50.8 | 14 | Santa Cruz, La Laguna | 158.3 | — 28.4 | 13 | — 3 | 34 | 5 |
| Yap, Western Carolines | 242.1 | —637.3 | 19 | + 3 | 44 | 27 | Manila | 132 | — 60.5 | 8 | — 7 | 89.9 | 7 |
| Tagbilaran | 126.5 | + 28 | 14 | + 4 | 22.1 | 6 | Antipolo | 129.2 | -------- | 10 | ----- | 68.6 | 7 |
| Surigao | 104.5 | + 66.6 | 7 | + 3 | 50.3 | 13 | Iba | 242.2 | — 514.4 | 9 | — 8 | 107.4 | 6 |
| Maasin | 93.6 | — 39 | 6 | + 1 | 31.2 | 2 | San Isidro | 239.7 | + 26.1 | 15 | — 2 | 74.1 | 17 |
| Cebu | 110.1 | — 29 | 19 | + 9 | 16.8 | 11 | Tarlac | 54.5 | — 275.4 | 13 | — 2 | 14 | 29 |
| Iloilo | 106.6 | —165.3 | 17 | + 4 | 23.6 | 2 | Baler | 132.4 | -------- | 13 | ----- | 39.9 | 11 |
| San Jose Buenavista | 197.5 | + 36 | 14 | — 4 | 74.2 | 16 | Dagupan | 249.1 | — 111.7 | 13 | — 5 | 98.8 | 6 |
| Cuyo | 200.1 | —148.4 | 18 | + 6 | 25.6 | 19 | Bolinao | 142.6 | — 729.6 | 15 | — 1 | 39.1 | 4 |
| Ormoc | 90.4 | + 16.2 | 11 | — 1 | 42.2 | 1 | Baguio | 380.4 | — 162.4 | 22 | + 1 | 58.4 | 9 |
| Tacloban | 108.1 | — 47 | 11 | — 5 | 26.7 | 16 | San Fernando, Union | 64.7 | — 417.3 | 11 | — 3 | 51.3 | 6 |
| Capiz | 319 | -------- | 18 | ----- | 52.9 | 14 | Echagüe | 167 | + 22.2 | 14 | — 2 | 55.4 | 29 |
| Borongan | 229 | + 50.1 | 18 | + 5 | 71.4 | 14 | Candon | 149.2 | — 359.8 | 6 | —11 | 98.3 | 7 |
| Calbayog | 121.6 | — 52 | 17 | + 2 | 19.6 | 23 | Vigan | 51.2 | — 385.6 | 6 | — 6 | 21.8 | 6 |
| Masbate | 66.9 | — 95.7 | 7 | — 6 | 46.7 | 14 | Tuguegarao | 157.6 | — 219.4 | 14 | — 1 | 39.8 | 11 |
| Laoang | 165.9 | + 25.9 | 19 | + 3 | 28.4 | 13 | Laoag | 52.1 | — 313.3 | 6 | — 5 | 40.6 | 9 |
| Legaspi | 116.5 | + 65.2 | 12 | — 1 | 49 | 14 | Aparri | 137.4 | — 55.9 | 6 | — 7 | 42.9 | 26 |
| Sumay, Guam | 71.3 | —172.4 | 14 | — 6 | 19 | 3 | Santo Domingo, Batanes Is. | 118.3 | — 238.7 | 15 | + 4 | 18 | 23 |

## DEPRESSIONS AND TYPHOONS.

Not a single depression or typhoon appeared in the neighborhood of the Philippines during the month. Even of such as occurred far out in the Pacific Ocean, only one deserves mention, though it was of very little importance. Appearing to the south of Meiacosima on May 24 and 25, it passed south of the Loochoos Islands on the 26th and receded toward the Bonin group from the 26th to the 27th.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes fué para todas las estaciones de Filipinas mayor que la de Mayo del año pasado, particularmente en la Isla de Luzón. Las mayores presiones se registraron el día 5 y las menores el 24 ó 29. La media mensual de Manila es casi idéntica á la normal de Mayo.

La temperatura media mensual fué ligeramente inferior á la del año pasado en las Islas Visayas y algo mayor en el norte de Luzón. En el sur de Luzón fué en unas partes menor y en otras casi igual á la de Mayo, 1910. La media mensual de Manila se diferencia de la normal de este mes en —1.1° C. Los valores extremos registrados en el Observatorio Central fueron 35 °C. y 21.7 °C., y corresponden á los días 25 y 8 respectivamente.

**Precipitación acuosa.**—Casi todas las estaciones del centro y norte de Luzón dan este mes un total de lluvia menor que el de Mayo, 1910, mientras que las del sur de Luzón y Mindanao lo dan generalmente mayor. En las estaciones de Visayas no hay tanta uniformidad, resultando para unas mayor y para otras menor la lluvia de este mes comparada con la del año pasado. La cantidad total de agua recogida en los pluviómetros de Manila es 132 mm., superior á la normal de Mayo en 19.4 mm.

## DEPRESIONES Y TIFONES.

Ninguna depresión ni tifón se observó este mes en las cercanías de Filipinas. Y aun de otras depresiones lejanas del Pacífico sólo merece citarse, aunque fué de muy poca importancia, la que apareció al sur de Meiacosima los días 24 y 25 y pasando por el sur de las islas Liukiu el 26, se movió del 26 al 27 al ENE en dirección á las islas Bonin.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[φ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 759.34 | 26.6 | 31.4 | 23.7 | 29.2 | 29.7 | 29.2 | 29.1 | 28.1 | 28.1 | 85.2 | 22 | 1.8 | 1.6 |
| 2 | 58.64 | 27.6 | 33.2 | 24.2 | 28.5 | 30.5 | 29 | 29.3 | 28.2 | 28 | 77.2 | 21 | 4 | 3 |
| 3 | 58.43 | 27 | 33.2 | 23 | 28.9 | 30.8 | 29.1 | 29.5 | 28.1 | 28 | 74.4 | 19.6 | 4.8 | 3.6 |
| 4 | 59.62 | 25.7 | 31.4 | 22.3 | 29 | 30.1 | 29.2 | 29.3 | 28.2 | 28.1 | 82.8 | 20.1 | 2.3 | 2.1 |
| 5 | 60.25 | 26.4 | 34.3 | 22.9 | 28.7 | 30 | 29.2 | 29.5 | 28.2 | 28.1 | 80.8 | 20.5 | 3.1 | 2.9 |
| 6 | 59.72 | 26.7 | 32.5 | 23 | 28.8 | 29.9 | 29.2 | 29.3 | 28.2 | 28.1 | 80.4 | 20.8 | 2.8 | 2.5 |
| 7 | 59.55 | 24.7 | 31.8 | 22.3 | 28.8 | 29.1 | 29.2 | 28.9 | 28.3 | 28 | 90.6 | 20.9 | 1.2 | 1.3 |
| 8 | 58.71 | 26.6 | 32.5 | 21.7 | 27 | 29 | 28.1 | 28.6 | 28.3 | 28.2 | 79.9 | 20.4 | 3.8 | 2.8 |
| 9 | 59.17 | 27.4 | 33.5 | 22.7 | 28.4 | 30 | 28.8 | 28.9 | 28.3 | 28 | 77.4 | 20.6 | 4.1 | 3 |
| 10 | 59.31 | 26.6 | 32.7 | 23.5 | 28.8 | 30.8 | 29 | 29.4 | 28.3 | 28.1 | 81.4 | 20.8 | 3.2 | 2.4 |
| 11 | 58.95 | 27.2 | 33.5 | 22.2 | 28.9 | 30.3 | 29.1 | 29.4 | 28.3 | 28.1 | 76.5 | 20.3 | 3.7 | 2.9 |
| 12 | 58.59 | 27.2 | 33.2 | 23 | 29.3 | 31 | 29.3 | 29.5 | 23.3 | 28.2 | 79 | 21.1 | 3.3 | 2.5 |
| 13 | 58.34 | 28 | 34.2 | 23.2 | 29.7 | 31.4 | 29.6 | 29.8 | 28.3 | 28.2 | 76 | 21 | 4.6 | 3.7 |
| 14 | 58.10 | 27.7 | 34.8 | 23.3 | 29.7 | 31.5 | 29.7 | 30.1 | 28.2 | 28.1 | 76.8 | 21 | 4.1 | 3.2 |
| 15 | 58.30 | 27.9 | 34.5 | 22.9 | 29.8 | 32 | 29.8 | 30.4 | 28.3 | 28.3 | 77 | 21.2 | 4.2 | 3.3 |
| 16 | 58.82 | 26.2 | 33 | 23.7 | 30 | 31.8 | 30.1 | 30.5 | 28.3 | 28.2 | 82.6 | 20.8 | 2.3 | 2.3 |
| 17 | 58.05 | 26.7 | 34.4 | 22.1 | 29.6 | 31.8 | 30 | 30.3 | 28.3 | 28.2 | 81.1 | 20.8 | 3.2 | 2.6 |
| 18 | 57.38 | 27.2 | 33.7 | 23.3 | 29.8 | 31.3 | 30 | 30.4 | 28.3 | 28.2 | 80 | 21.3 | 3.5 | 2.5 |
| 19 | 57.38 | 27.6 | 34.4 | 22.8 | 29.8 | 31.5 | 30.1 | 30.4 | 28.5 | 28.2 | 75.2 | 20.3 | 4.2 | 3.1 |
| 20 | 57.81 | 27.5 | 34.7 | 21.9 | 29.8 | 31 | 29.9 | 30.5 | 28.5 | 28.3 | 75.9 | 20.4 | 4.3 | 3 |
| 21 | 57.83 | 27.7 | 33.7 | 23.5 | 30.4 | 32.4 | 30.4 | 30.6 | 28.6 | 28.3 | 76.4 | 20.8 | 4.3 | 3.1 |
| 22 | 57.56 | 28 | 34.3 | 23.7 | 30.7 | 32.4 | 30.5 | 30.9 | 28.5 | 28.3 | 79 | 22 | 3.9 | 2.9 |
| 23 | 57.29 | 28 | 34.5 | 23.8 | 30.9 | 32.9 | 30.7 | 31 | 28.6 | 28.3 | 80.6 | 22.4 | 3.7 | 3.1 |
| 24 | 56.85 | 29.1 | 34.8 | 22.8 | 31.3 | 33.5 | 31 | 31.4 | 28.7 | 28.4 | 70.7 | 20.5 | 5.8 | 4.7 |
| 25 | 57.74 | 28.4 | 35 | 23.9 | 31.6 | 33 | 31.2 | 31.8 | 28.7 | 28.4 | 72.9 | 20.7 | 5.1 | 3.9 |
| 26 | 58.26 | 28.7 | 33.8 | 24.2 | 32 | 33.8 | 31.5 | 31.8 | 28.7 | 28.3 | 74.6 | 21.7 | 4.6 | 3.7 |
| 27 | 58.31 | 28.1 | 34.2 | 24.5 | 32.1 | 34.2 | 31.8 | 32 | 28.8 | 28.6 | 77.3 | 21.6 | 3.7 | 2.9 |
| 28 | 57.70 | 28 | 34.3 | 23.5 | 31.8 | 34.3 | 32 | 32 | 28.8 | 28.4 | 77.8 | 21.8 | 3.9 | 3 |
| 29 | 57.13 | 28.6 | 33.6 | 24.4 | 32.2 | 34.2 | 32 | 32.2 | 28.9 | 28.5 | 76.9 | 22.2 | 4.2 | 3.1 |
| 30 | 57.38 | 27.8 | 34 | 24.1 | 32.3 | 34.6 | 32 | 32.5 | 29 | 28.3 | 79 | 21.8 | 4.1 | 3 |
| 31 | 58.39 | 27.1 | 32.8 | 23.5 | 32.3 | 33.2 | 32.2 | 32.2 | 29 | 28.5 | 83.5 | 22.2 | 1.5 | 2 |
| Mean | 758.35 | 27.4 | 33.6 | 23.2 | 30 | 31.7 | 30.1 | 30.4 | 28.4 | 28.2 | 78.7 | 21.1 | 3.7 | 2.9 |
| Total | | | | | | | | | | | | | 113.3 | 89.7 |
| Departure from normal | —0.01 | —1.1 | +0.2 | —0.7 | | | | | | | +2.4 | —0.7 | | |

| Date. | Wind. | | | | Clouds. | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | |
| | | | | | | Upper. | Lower. | | | | |
| | | *Km.* | *Km.* | | *0–10* | | | *h.* | *m.* | *mm.* | |
| 1 | SE | 125 | 10 | NNE | 7.4 | Ci.-S. | Cu. N | 4 | 35 | 0.8 | ⌒° a. ☈ p p. |
| 2 | SE quad. | 111.5 | 10 | SW | 7.1 | Ci.-S. | Cu. NE | 6 | 15 | ---- | d° a. p° p. |
| 3 | SE quad. | 159 | 16.5 | WNW | 5.9 | Ci.-S. | Cu. E | 7 | 20 | ---- | p° p. |
| 4 | SE quad. | 98 | 12.5 | WSW | 7.8 | Ci.-S. | Cu. E | 3 | 10 | 1.1 | ☈ ● p. |
| 5 | SE | 172.5 | 16.5 | E | 8.1 | Ci.-S. NNW | Cu.-N. E | 6 | 15 | 3 | p° a. ⊤° ⌒ ● p. |
| 6 | SE quad. | 130 | 17 | NNW | 8.2 | Ci.-S. | Cu.-N. E | 5 | 35 | ---- | ☈ ●° p. |
| 7 | NE quad. | 172 | 20.5 | N | 8.5 | Ci.-S. | Cu., N. E | 4 | 40 | 89.9 | ⊤ ●$^{2}$ p. |
| 8 | W quad. | 162 | 21 | SSW | 4.6 | A.-Cu. | Cu. SE | 9 | 15 | ---- | |
| 9 | S quad. | 168.5 | 17 | S | 5.4 | Ci. | Cu. | 9 | 15 | ---- | ☈° p. |
| 10 | W quad. | 122.5 | 16 | W | 5.8 | A.-S. | Cu. | 5 | 30 | ---- | ☈° p. |
| 11 | E quad. | 143 | 14 | NNW | 5.3 | Ci.-S. | Cu. | 7 | 35 | ---- | ☈° p. |
| 12 | W quad. | 142.5 | 17 | WNW | 7.3 | Ci. | Cu. E | 7 | 05 | ---- | ☈ p. |
| 13 | SE quad. | 155.5 | 19 | SSE | 7.1 | Ci.-S. | Cu. E | 9 | 05 | ---- | ⌓$^{2}$ a. ☈ p. |
| 14 | N quad. | 181.5 | 16 | SE | 7.4 | Ci. W | Cu. SE | 8 | 00 | ---- | ☈ p. |
| 15 | E quad. | 161.5 | 12 | E | 5.4 | Ci. | Cu. E | 8 | 10 | ---- | ☈° p. |
| 16 | E quad. | 158.5 | 18 | ESE | 9.3 | Ci.-S. | Cu.-N. ESE | 2 | 35 | 1 | d° a. ☈° ● p. |
| 17 | E quad. | 139 | 13 | WNW | 6.7 | Ci. | Cu. SE | 8 | 05 | 13.5 | ☈° ● p. |
| 18 | NE quad. | 143 | 14.5 | NE | 6.1 | Ci. NE | Cu. E | 7 | 50 | .3 | d° a. ☈ p. |
| 19 | E quad. | 145.5 | 16 | W | 5.7 | Ci. | Cu. SE | 8 | 15 | ---- | |
| 20 | S quad. | 144 | 17.5 | SW | 4.7 | Ci.-S. | Cu. E | 8 | 45 | ---- | ☈° ●° p. |
| 21 | S quad. | 174.5 | 21 | SWbyW | 6.2 | Ci. NE | Cu. | 6 | 45 | ---- | ⌓ a. ☈° p. |
| 22 | NW quad. | 151.5 | 18 | NE | 6.2 | Ci. | Cu. E | 7 | 25 | ---- | ☈ p. |
| 23 | NW quad. | 153.5 | 18 | WNW | 7.3 | Ci.-S. | Cu. E | 7 | 20 | ---- | ☈ p. |
| 24 | SE quad. | 177.5 | 16 | SW | 4 | Ci. SE | Cu. E | 10 | 15 | ---- | ⊕ p. |
| 25 | SE quad. | 152.5 | 17.5 | S | 5.2 | Ci. NE | Cu. | 9 | 05 | ---- | ☈° p. |
| 26 | S quad. | 190.5 | 19 | SW | 6.4 | Ci.-S. E | Cu. SE | 9 | 00 | ---- | ⌒ p. |
| 27 | W quad. | 163.5 | 17 | W | 6.3 | Ci. | Cu. E | 7 | 15 | ---- | ☈° p. |
| 28 | E quad. | 154.5 | 16 | W | 6.8 | Ci. | Cu. E | 7 | 00 | ---- | ☈ p. |
| 29 | SW quad. | 192 | 25 | WSW | 5.7 | Ci. | Cu. | 7 | 35 | ---- | |
| 30 | NE quad. | 166 | 20 | WSW | 7.6 | Ci.-S. | Cu. | 7 | 55 | ---- | ○ a. ☈ d° p. |
| 31 | NW quad. | 151 | 20 | NNW | 8.2 | Ci.-S. | Cu.-N. EbyN | 3 | 50 | 22.4 | p° a. ●$^{2}$ ⊤$^{2}$ p. |
| Mean | | 153.6 | 16.8 | | 6.6 | | | 7 | 07 | | |
| Total | | | | | | | | 220 | 40 | 132 | |
| Departure from normal | | —73 | | | +0.9 | | | —11 | 34 | +19.4 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 758.74 | 26.1 | 31.2 | 23.3 | 88.2 | WNW | 0.2 | 6.2 | Ci.-S. NE | Cu.-N. SW | 3 | ●° ☈°a. Ω$^2$ ϟa.p. |
| 2 | 58.09 | 26.6 | 31.9 | 22.9 | 85.8 | NW, S | .3 | 6 | A.-Cu. SE | Cu.-N. SW | ------ | Ω$^2$ a. ∞ Ω° p. |
| 3 | 58.14 | 27.2 | 31.1 | 22.8 | 84.2 | NNW, NW | .3 | 5 | A.-Cu. SE | Cu.-N. SW | ------ | ϟ Ω° a. ∞ ϟ$^2$ p. |
| 4 | 59.20 | 26.7 | 32.6 | 23.1 | 86.5 | Variable | .7 | 5.8 | Ci.-S. | Cu.-N. SW | ------ | ϟ$^2$ Ω° a. ∞ ☈ ϟp |
| 5 | 59.90 | 27.3 | 31.1 | 24 | 87 | Variable | .7 | 6.8 | A.-Cu., Ci.-S. SE, NE | Cu.-N. SW | ------ | ϟ d° a. ∞ Ω$^2$ p. |
| 6 | 59.66 | 27.5 | 32.8 | 23.1 | 84.7 | Variable | .8 | 5.7 | Ci.-S. NE | Cu.-N. SW | 31.7 | Ω$^2$ a. ∞ p. |
| 7 | 59.60 | 26.9 | 31 | 22.7 | 83.8 | NW quad. | .7 | 6.3 | Ci.-S. | Cu.-N. SW | ------ | Ω° ● a. ∞ Ω° p. |
| 8 | 58.89 | 27.2 | 31.5 | 22.7 | 84.3 | ENE | .8 | 3.3 | Ci. NE | Cu., Cu.-N. SW | ------ | ϟ$^2$ Ω$^2$a. ∞ ϟ° p. |
| 9 | 59.04 | 27.8 | 33 | 23.6 | 83 | ENE | .7 | 2.8 | Ci., Ci.-S. | Cu.-N. S | ------ | Ω$^2$ a.∞ Ω p. |
| 10 | 58.98 | 27.7 | 32.2 | 23.4 | 83.5 | Variable | .5 | 4.2 | Ci. | Cu., Cu.-N. E | ------ | Ω$^2$ a.p. ∞ p. |
| 11 | 58.54 | 26.8 | 32.1 | 23.5 | 88.5 | E quad. | .7 | 5.2 | Ci.-S. NE | Cu.-N. | 7.1 | Ω$^2$ a.p.d ☈° p. |
| 12 | 58.09 | 26.5 | 31 | 23.5 | 89 | NE quad. | .5 | 7.3 | Ci.-S. | Cu.-N. E | ------ | d ●° a. Ω$^2$ a.p. |
| 13 | 58.12 | 26.2 | 29.9 | 23.6 | 90.7 | Variable | .7 | 9.7 | Ci.-S. NE | Cu.-N. E | 50.3 | Ω$^2$ a.d° ●$^2$ ϟ$^2$ ⊤ p |
| 14 | 58.29 | 26.2 | 29.5 | 23.2 | 93.3 | S | .3 | 8.3 | Ci. NE | Cu.-N. | 7.1 | ● a.p. d p. |
| 15 | 58.41 | 27 | 30.8 | 23.3 | 87.7 | ENE | .7 | 7 | Ci.-S. S | Cu.-N. E | ------ | Ω$^2$ a.p. ∞ p. |
| 16 | 58.55 | 26.2 | 31.1 | 23.4 | 89.7 | N quad. | 1.2 | 6.8 | Ci.-S. S | Cu.-N. E | ------ | Ω$^2$ a.p. ∞ p. |
| 17 | 57.82 | 26.5 | 31.4 | 23.5 | 86.8 | ENE | .7 | 5.8 | Ci.-S. S | Cu.-N. E | ------ | ≡° a. Ω$^2$a.p. ∞ p. |
| 18 | 57.56 | 27.1 | 31.6 | 22.8 | 83.8 | ENE | 1 | 2.8 | Ci.-S. | Cu.-N. | ------ | Ω$^2$ a.p. ∞ p. |
| 19 | 57.80 | 27.4 | 32.6 | 23.2 | 83.7 | Variable | 1.2 | 3.8 | Ci.-S. | Cu.-N. | ------ | Ω$^2$ ≡° a. ϟ$^2$ p. |
| 20 | 57.89 | 27.1 | 31.8 | 23.1 | 85 | S, NE | 1 | 4.8 | Ci.-S. N | Cu.-N. | ------ | Ω$^2$ a. ϟ$^2$ ⌒ p. |
| 21 | 57.91 | 27.6 | 32.2 | 23.5 | 84.5 | E quad. | 1.2 | 4 | Ci. N | Cu.-N. | ------ | Ω$^2$ a. ∞ ϟ$^2$ p. |
| 22 | 57.51 | 27.4 | 31.8 | 23.9 | 84.3 | E quad. | 1 | 3.5 | Ci. N | Cu.-N. | ------ | Ω$^2$ a.p. ϟ a. ∞ p. |
| 23 | 57.36 | 27.2 | 32.2 | 22.3 | 84 | NE quad. | .8 | 4.7 | Ci.-S. N | Cu.-N. | ------ | Ω$^2$ a.p. ∞ p. |
| 24 | 57.17 | 27.6 | 31.9 | 23.8 | 83.2 | NE quad. | 1.2 | 4.2 | Ci. N | Cu.-N. | ------ | Ω$^2$ a. ∞ ϟ° p. |
| 25 | 57.89 | 27.3 | 31.8 | 23.9 | 86.5 | ENE | .7 | 5.8 | Ci. NE | Cu.-N. | ------ | Ω° a. ∞ ϟ° p. |
| 26 | 58.33 | 27.8 | 32.8 | 23 | 84.3 | NE | .5 | 2.7 | Ci. | Cu.-N. SE | ------ | Ω$^2$ a. ∞ Ω° ϟ° p. |
| 27 | 58.51 | 27.5 | 31.6 | 24 | 85.7 | Variable | .7 | 6.2 | Ci.-S. E | Cu.-N. SE | ------ | Ω$^2$ a.p. ϟ° a. ∞ p. |
| 28 | 57.94 | 27.6 | 32.6 | 22.8 | 82.6 | Variable | .8 | 4 | Ci. E | Cu.-N. SW | ------ | Ω$^2$ a.p. ∞ p. |
| 29 | 57.36 | 27.5 | 31.5 | 23.3 | 83.3 | S quad. | .8 | 2.5 | Ci. E | Cu.-N. | ------ | Ω$^2$ a. ∞ ϟ° p. |
| 30 | 57.52 | 27.7 | 31.8 | 23.3 | 82.7 | Variable | .7 | 2.3 | Ci. W | Cu.-N. W | ------ | Ω$^2$ a. ∞ ϟ$^2$ Ω° p. |
| 31 | 58.06 | 26.4 | 32.3 | 23.5 | 88.2 | E quad. | 1.3 | 7.5 | Ci.-S. N | Cu.-N. | 5.3 | Ω$^2$ a.d p. ●° a.p. |
| Mean | 758.29 | 27.1 | 31.7 | 23.3 | 85.8 | ------------ | .8 | 5.2 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------ | ------------ | 104.5 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 758.60 | 26.9 | 30.5 | 24.4 | 78.8 | E | 4.6 | 6.0 | Ci.-S. | Cu.-N. NNW | 1.3 | d a. ●° ☈ a.p. |
| 2 | 58.07 | 25.7 | 30.5 | 23.5? | 83.3 | NE, S | 4.6 | 6.2 | Variable | Cu., Cu.-N. NNE | 7.6 | Ω a. ☈ a.p. ● p. |
| 3 | 58.01 | 25.8 | 29.8 | 23 | 86.2 | S | 4.2 | 5.7 | Ci.-S. | Cu.-N. NE, ENE | 5.8 | Ω$^2$ a. ● a.p. ☈ p. |
| 4 | 59.15 | 26.8 | 31 | 24 | 79.5 | E, SSE | 4.4 | 5.8 | Ci.-S. | Cu.-N. ESE | ------ | Ω$^2$ a. ϟ a.p. |
| 5 | 60.03 | 27.4 | 31.6 | 24.5 | 76.5 | E | 5.7 | 5.8 | Ci.-S. | Cu., Cu.-N. ESE | .8 | Ω ●° a. ϟ ☈ ⊕ p. |
| 6 | 59.66 | 27 | 31.6 | 23.8 | 76 | Variable | 6.2 | 5.8 | Ci.-S. | Cu. E | 16.3 | Ω a. ☈ a.p. |
| 7 | 59.61 | 26 | 30.5 | 21.8 | 81 | Variable | 5.3 | 6.7 | Ci.-S. | Cu., N. ENE | 1 | ● a. ☈ a.p. |
| 8 | 58.55 | 27.7 | 32 | 24.3 | 75.4 | Variable | ---------- | 3.5 | Ci. | Cu. ENE | 4.8 | Ω a. |
| 9 | 58.80 | 28 | 32.6 | 24.4 | 76.2 | E quad. | 6.3 | 5.8 | Ci. | Cu. ENE | 4.1 | ● ☈ a.p. |
| 10 | 58.86 | 28 | 32.2 | 24.5 | 76.2 | Variable | 7.1 | 5.3 | Ci., Ci.-S. | Cu. ENE | .8 | ≡° ● a. ☈ a.p. |
| 11 | 58.22 | 27.8 | 32.7 | 24.6 | 75.4 | S | 5.9 | 5.2 | Ci.-S. | Cu. E quad. | 16.8 | Ω ● a. ☈ a.p. |
| 12 | 57.89 | 28.1 | 31.4 | 24.8 | 76.8 | NE quad. | 9.5 | 5 | Ci., Ci.-S. | Cu. ENE | ------ | Ω$^2$ ● ϟ ⌒ a. ⊕ p. |
| 13 | 58.10 | 26.9 | 30 | 24.1 | 80.1 | E | 7 | 6.2 | Ci.-S. | Cu.-N. ENE | 4.8 | Ω a. ●° ☈ a.p. |
| 14 | 57.99 | 27 | 31.5 | 24 | 80.5 | Variable | 4.8 | 7.3 | Ci.-S. | Cu.-N. ENE | .3 | Ω$^2$ ●° a.d p. ϟ |
| 15 | 58.06 | 27.1 | 31 | 24.4 | 81.5 | E, ESE | 6.4 | 6.5 | Ci., Ci.-S. | Cu., Cu.-N. E | ------ | Ω a. ϟ a.p. |
| 16 | 58.46 | 26.7 | 29.8 | 24 | 81.1 | NE quad. | 6.7 | 7 | Ci.-S. | Cu., Cu.-N. ENE | 3.6 | Ω a. ●° ϟ a.p. |
| 17 | 57.82 | 27.4 | 31.5 | 23.5 | 76.5 | NE quad. | 8.7 | 4.2 | Ci. | Cu., Cu.-N. E | ------ | Ω a. ϟ a.p. |
| 18 | 57.32 | 27.8 | 31.8 | 23.9 | 75.8 | E | 7 | 4.8 | Ci. | Cu., Cu.-N. ENE | 13.8 | Ω d a.p p. ☈ |
| 19 | 57.58 | 26.9 | 31 | 23.8 | 81.7 | Variable | 6.3 | 5 | Ci. | Cu. ENE | 1.3 | Ω ● a. ☈ ϟ a.p. |
| 20 | 57.73 | 27.8 | 31.8 | 23.6 | 77.4 | Variable | 6.6 | 6 | Ci.-S. | Cu.-N. ENE | 12.4 | Ω a. ● p. ☈ a.p. |
| 21 | 57.66 | 27.6 | 32 | 23.3 | 77.5 | NE | 7.2 | 4.5 | A.-Cu. E | Cu. ENE | ------ | Ω$^2$ a. ϟ a.p. |
| 22 | 57.19 | 28.4 | 32.4 | 25.2 | 73.9 | NE quad. | 8.4 | 3.8 | Ci. | Cu. ENE | ------ | Ω a. ϟ ☈ p. |
| 23 | 57.08 | 28.2 | 32.8 | 24.7 | 73.8 | NE quad. | 8.9 | 4 | Ci. | Cu. ENE | ------ | Ω a. ϟ p. |
| 24 | 56.80 | 28.4 | 32.3 | 24.5 | 72.7 | ENE | 7.9 | 3.5 | Ci. | Cu. E | 1.6 | Ω a. ϟ p. |
| 25 | 57.82 | 27.8 | 33 | 25 | 77.5 | NE, E | 6.5 | 5.7 | Ci., Ci.-S. | Cu.-N. ENE | .8 | Ω ●° a. ☈ a.p.d |
| 26 | 58.27 | 28.5 | 32.8 | 24 | 72.5 | E | 6.1 | 3.3 | Ci. | Cu. ENE | ------ | Ω a. ☈ ϟ p. |
| 27 | 58.22 | 28.6 | 33.3 | 24 | 71.5 | NE, E | ---------- | 5 | Ci.-S. | Cu. ENE | .8 | Ω ⊤ a. ∞ p. ϟ |
| 28 | 57.76 | 28.2 | 33.8 | 24 | 75.1 | Variable | 5.9 | 4 | Ci. | Cu. ENE | ------ | Ω ●° a. ϟ ∞ p. |
| 29 | 57.22 | 28.6 | 32.6 | 24.2 | 72 | Variable | 5.2 | 3.8 | Ci. | Cu. WSW, NNE | ------ | Ω a. ϟ p. |
| 30 | 57.42 | 28.6 | 32.9 | 23.2 | 73.7 | SSE | 5.5 | 4.8 | Ci., Ci.-S. | Cu. ENE | 7.1 | Ω ϟ a. ● ☈ p. |
| 31 | 57.73 | 27.9 | 32.8 | 23.1 | 75.3 | Variable | 5.9 | 5.5 | Ci.-S. | Cu. ENE | 4.3 | ≡° Ω a. ● ☈ a.p. |
| Mean | 758.12 | 27.5 | 31.8 | 24 | 77.1 | ------------ | 6.4 | 5.2 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------ | ------------ | 110.1 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[φ=10° 42′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.90 | 26 | 32 | 22.8 | 84 | N quad. | 3.9 | 5.7 | Ci., Ci.-S. | Cu. NNE | 4.3 | Ω ● a. ↯ ⛈ a.p. |
| 2 | 58.41 | 25.3 | 32.4 | 22.2 | 87.3 | Variable | 4.7 | 4.7 | Ci., Ci.-S. | Cu. NNW | 23.6 | Ω$^2$ ⛈ ●$^2$ d ↯ ⊤ |
| 3 | 57.97 | 26.2 | 31.7 | 23.4 | 82.3 | N quad. | 7.5 | 8.5 | Ci.-S. | Cu. NE | 2.3 | ≡ ↯ ⊤ d ⛈ ● |
| 4 | 59.04 | 26.4 | 32.4 | 23.4 | 85.7 | N quad. | 5.4 | 6 | Ci., Ci.-S. | Cu. | 7.1 | ↯ a. p. d ⛈ ● p. |
| 5 | 60.06 | 26.1 | 31.6 | 23.6 | 84.3 | W | 4.9 | 7.2 | Ci., Ci.-S. | Cu. | 1.1 | ↯ a. p. d ●° p. |
| 6 | 59.64 | 26.6 | 31.5 | 23.4 | 82.2 | W., SE | 5.4 | 6.2 | Ci. | Cu. | 1.3 | ↯ a. p. ⛈ ● d p. |
| 7 | 59.62 | 26.3 | 30 | 23.6 | 81.5 | SW | 6.6 | 8 | Ci.-S. | Cu. | ------ | ↯ a. p. d p. |
| 8 | 58.74 | 27.1 | 31.3 | 22.8 | 77.5 | N quad. | 5.9 | 3.7 | Ci. E, NE | Cu. | ------ | Ω a. ↯ a. p. ⊤ p. |
| 9 | 59.12 | 26.3 | 31.6 | 23.8 | 79.8 | NW | 4.7 | 5.8 | Ci.-S. | Cu. | ------ | Ω° a. ↯ a. p. ⛈ p. |
| 10 | 58.99 | 26.6 | 33.1 | 23.2 | 80 | ENE | 5.1 | 6.5 | Ci. | Cu. | 20.1 | ⊤ ⛈ ● ↯ p. |
| 11 | 58.31 | 27.6 | 33.2 | 23.8 | 75.8 | NE quad. | 7.1 | 4.8 | Ci. | Cu. NE | .5 | Ω a. ⊤ ↯ ● p. |
| 12 | 57.92 | 28.1 | 33.2 | 24.2 | 74.8 | ENE | 11 | 5.3 | Ci. SE | Cu. | ------ | Ω ○ a. ↯ a. p. |
| 13 | 58.01 | 28 | 33.5 | 24.7 | 76 | ENE | 11.2 | 5.7 | Ci. | Cu. ENE, NE | ------ | Ω a. ↯ a. p. ⊤ Ψ p. |
| 14 | 58.01 | 26.9 | 32.1 | 24.6 | 81.8 | ENE | 6.6 | 8.3 | Ci.-S. | Cu. | 7.6 | ↯ ● a. p. ⛈ d p. |
| 15 | 58.36 | 26.4 | 33.1 | 23.8 | 81.5 | NE, NNE | 4.6 | 7.3 | Ci. | Cu. N | 1.8 | ⛈ ● d p. |
| 16 | 58.51 | 26.8 | 32.1 | 23.2 | 79.5 | NE quad. | 5.9 | 8.7 | Ci., Ci.-S. | Cu. | 2 | ↯ a. p. ⊤ ⛈ ● p. |
| 17 | 57.82 | 27.2 | 33 | 22.9 | 74.3 | N, NNE | 6 | 4.3 | Ci. | Cu. NE | ------ | ↯ p. |
| 18 | 57.46 | 27.1 | 33.7 | 23.6 | 78.5 | ENE, NE | 5.1 | 5 | Ci., Ci.-S. | Cu. | ------ | Ω a. ↯ a. p. ⛈ p. |
| 19 | 57.54 | 27.1 | 32.1 | 24 | 78.3 | E | 5.3 | 4.8 | Ci. | Cu. E | 14 | Ω a. ⛈ ● ↯ p. |
| 20 | 57.84 | 27.2 | 32 | 23.7 | 79.2 | S | 4.9 | 6 | Ci., Ci.-S. | Cu. | ------ | ↯ a. p. ⊤ d ⛈ p. |
| 21 | 57.74 | 27.6 | 34.1 | 23.8 | 77.2 | S | 4.9 | 6 | Ci. | Cu. | 3.3 | ↯ a. p. ⊤ ⛈ ● p. |
| 22 | 57.08 | 29 | 34.1 | 24.2 | 74.5 | NE quad. | 8.8 | 4.3 | Ci. | Cu. NE | .5 | ↯ a. p. ⛈ ● p. |
| 23 | 56.96 | 28.6 | 33.1 | 25.2 | 70.8 | NE quad. | 8 | 5.3 | Ci., Ci.-S. | Cu. | ------ | ↯ a. p. |
| 24 | 56.70 | 28.5 | 33.9 | 24.6 | 72 | NE, SW | 7 | 3.5 | Ci. | Cu. | .3 | ⊤ d ⛈ ●° p. |
| 25 | 57.95 | 27.3 | 33.2 | 24.7 | 77.8 | SW | 4.5 | 7.8 | Ci.-S. | Cu. ENE | ------ | ↯ a. p. ⛈ ⊤ p. |
| 26 | 58.34 | 27.2 | 31.5 | 24.4 | 81.3 | Variable | 5.5 | 5.5 | Ci.-S. | Cu.-N. E | ------ | Ω a. ↯ a. p. ⊤ ⛈ p. |
| 27 | 58.30 | 28.2 | 33.7 | 24.4 | 76.8 | E | 4.2 | 7.2 | Ci.-S. | Cu. | ------ | ↯ a. p. ○° p. |
| 28 | 57.73 | 28.5 | 34 | 25.2 | 75.5 | SW | 7.4 | 5.7 | Ci. | Cu. | ------ | ⊤ ↯ ⛈ p. |
| 29 | 57.42 | 28 | 31.7 | 24.8 | 79.7 | SW | 8.9 | 6 | Ci. | Cu. | ------ | Ω a. ↯ ⛈ p. |
| 30 | 57.54 | 28.1 | 32.8 | 24.4 | 79.3 | SW | 5.8 | 4.5 | Ci., Ci.-S. | Cu. | 16.3 | Ω a. ⛈ ↯ ● p. |
| 31 | 58 | 27.4 | 33.6 | 24.1 | 80.8 | SE quad. | 4 | 6 | Ci., Ci.-S. | Cu. NE | .5 | ↯ a. p. ⛈ d p. |
| Mean | 758.19 | 27.2 | 32.6 | 23.9 | 79 | ------------ | 6.2 | 5.9 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 106.6 | |

### ORMOC.

[φ=11° 00′ N; λ=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.75 | 25.8 | 31.4 | 22.7 | 88.8 | Variable | 6.9 | 7 | Ci. | Cu. N, NE | 42.2 | ↯ p ≡° ⛈ ● |
| 2 | 58.23 | 25 | 29.5 | 21.9 | 89.5 | Variable | --------- | 7.3 | A.-Cu. WbyN | Cu.-N. WbyN | 2.3 | d ↯ p. |
| 3 | 58.22 | 25.5 | 29.8 | 21 | 85.7 | Variable | 5.9 | 4.7 | Ci., Ci.-S. SE | Cu.-N. SE | ------ | Ω° a. ↯ p. |
| 4 | 59.25 | 25.5 | 30.6 | 22 | 88.2 | NW quad. | 5.9 | 6 | Ci.-S. E | Cu.-N. E | .3 | Ω° a. d° ↯ p. |
| 5 | 60.12 | 25.4 | 29.6 | 22.2 | 89.2 | N | 4.1 | 6.7 | Ci.-S. EbyN | Cu.-N. | ------ | Ω° ○° ⊤ a. ↯ ⊤ p. |
| 6 | 59.84 | 25.1 | 30.4 | 21.7 | 88.8 | NE quad. | --------- | 6.2 | Ci.-S. | Cu. E | ------ | Ω° a. ⊤ ↯ p. |
| 7 | 59.78 | 26.6 | 30.4 | 23.1 | 78.3 | S | --------- | 7.5 | Ci.-S. E | Cu.-N. | .3 | ⊤ a. p. ↯ d° p. |
| 8 | 58.94 | 25.9 | 31.4 | 21.9 | 83.7 | N quad. | 5.9 | 5.8 | Ci.-S. NE | Cu.-N. ENE | ------ | ⛈ ↯ p. |
| 9 | 59.11 | 25.5 | 31.6 | 21.1 | 84.3 | NW quad. | 5.9 | 3.5 | Ci. | Cu. NE | ------ | Ω° a. ⊤ ↯ p. |
| 10 | 59.07 | 26.1 | 31 | 22.2 | 86.3 | N quad. | 5.8 | 4.2 | Ci.-S., Ci. | Cu. E | 1 | Ω° a. d ↯ p. |
| 11 | 58.68 | 25.3 | 30.5 | 21.8 | 87.2 | N quad. | 5.8 | 5.2 | Ci.-S., Ci. | Cu.-N: ENE | 5.1 | Ω° ⛈ ⊤ d ↯ |
| 12 | 58.18 | 25.8 | 32 | 22 | 86.7 | N | --------- | 4.5 | Ci.-S., Ci. | Cu. EbyN | .5 | ↯ p a. p. ⊤ p. |
| 13 | 58.48 | 25 | 27.5 | 22.4 | 89.3 | N, SE | 3.9 | 9 | Ci.-S. | Cu.-N. E | 2.5 | Ω° d a. ↯ p. |
| 14 | 58.22 | 24.3 | 29.8 | 22 | 94.2 | N | 5.2 | 8.8 | A.-Cu. EbyN | Cu.-N. E | 18.6 | Ω° p ⛈ ● ↯ Ψ |
| 15 | 58.45 | 25.7 | 29.5 | 22.1 | 90 | N, S | 5.2 | 7.8 | A.-Cu. E | Cu.-N. E | ------ | Ω ○ ⊤ a. ↯ p. |
| 16 | 58.71 | 24.4 | 29.6 | 21.6 | 93.8 | N | 5.1 | 7.7 | Ci.-S., A.-Cu. | Cu.-N. E | 2.6 | ⛈ ⊤$^2$ a. ↯ p. d |
| 17 | 58.04 | 25 | 29.6 | 21.3 | 88.3 | NW quad. | 5.5 | 5.3 | A.-Cu. SE | Cu.-N. E | ------ | Ω° ⛈ a. ⊤ ↯ p. |
| 18 | 57.64 | 25.6 | 29 | 21.4 | 83 | N quad. | 5.4 | 5.8 | Ci.-S. | Cu.-N. E | ------ | Ω a. ⊤ ↯ p. |
| 19 | 57.79 | 25.9 | 31 | 21.6 | 82.8 | N, S | 6.8 | 4.5 | Ci. | Cu.-N. ENE | ------ | Ω° a. ⌒ ⛈ p. ↯ |
| 20 | 57.98 | 25.6 | 31 | 21.6 | 88.2 | N | 5.3 | 5 | A.-Cu. E | Cu., Cu.-N. SE | ------ | Ω° a. ⊤ ↯ p. |
| 21 | 57.89 | 26.3 | 31.2 | 22.2 | 85 | N, S | 6.4 | 3.8 | Ci.-S., Ci. | Cu.-N. E | ------ | Ω° a. ↯ p. |
| 22 | 57.50 | 26.4 | 32 | 22.4 | 81.2 | N, SE | 7.2 | 3.3 | Ci. | Cu., Cu.-N. E | ------ | Ω° p a. ↯ p. |
| 23 | 57.34 | 26 | 31.9 | 21.1 | 82.7 | N | 6.9 | 3.3 | Ci. E | Cu. E, NE | ------ | Ω a. ⊤ p. |
| 24 | 57 | 26.4 | 32.2 | 21.5 | 81.2 | NE quad. | 7.7 | 3.3 | Ci. | Cu., Cu.-N. E | ------ | Ω° a. ↯ p. |
| 25 | 57.95 | 26.1 | 31 | 21.8 | 83.7 | NW quad. | 4.8 | 5.2 | A.-Cu. EbyS | Cu.-N. E | 13.7 | ⛈ ● a. ↯ p. |
| 26 | 58.44 | 26.1 | 30.9 | 21.5 | 82.3 | Variable | 5.6 | 4 | Ci. | Cu. E | ------ | Ω° a. ↯ a. p. |
| 27 | 58.39 | 26.6 | 31 | 22 | 83 | Variable | 6.8 | 5.2 | Ci. | Cu. | ------ | ↯ p. |
| 28 | 57.87 | 26.5 | 31.4 | 22.3 | 85 | N | 5.7 | 4.8 | Ci. | Cu. NE | ------ | ⊤ ↯ p. |
| 29 | 57.39 | 26.6 | 31.1 | 22.4 | 84 | N, S | 6.2 | 4.8 | Ci. | Cu. NE | ------ | ⊤ ↯ p. |
| 30 | 57.50 | 26.7 | 31.3 | 22.5 | 82.7 | N, S | 5.5 | 5.2 | Ci. WbyN | Cu.-N. NNE | ------ | ⛈ ↯ p. |
| 31 | 57.93 | 26.3 | 31 | 22.6 | 84.5 | N quad. | 6.4 | 5.2 | Ci.-S., Ci. | Cu.-N. ESE | 1.3 | ⌒ ↯ p. |
| Mean | 758.34 | 25.8 | 30.7 | 21.9 | 85.9 | ------------ | 5.8 | 5.5 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 90.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N ; $\lambda$=125° 00′ E ; barometer above sea, 3.4 meters ; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 759.10 | 27.4 | 34.5 | 24.5 | 85 | NW quad. | 0.8 | 6.5 | Ci.-S. ENE | Cu.-N. N | 0.5 | ϟ a. ⛈ ●° p. |
| 2 | 58.31 | 26.8 | 33.5 | 24 | 81.8 | NW quad. | .7 | 5 | Ci.-S. | Cu., Cu.-N. N | ------ | Ω$^2$ ⌒ a. d p. |
| 3 | 58.41 | 27.5 | 32.4 | 24 | 80.7 | SSE | .7 | 5 | Ci.-S. W | Cu. ENE | 3.6 | Ω$^2$ a. |
| 4 | 59.58 | 27.1 | 31.4 | 24 | 85.8 | Variable | .5 | 7.3 | Ci.-S. N | Cu., Cu.-N. ESE | ------ | ● ⊤ a. |
| 5 | 60.45 | 26.9 | 31.6 | 24.2 | 87.8 | ESE | .5 | 6.7 | Ci.-S. W | Cu.-N. ENE | ------ | ◯$^2$ a. |
| 6 | 60.21 | 26.6 | 32.4 | 24 | 86.5 | W | .3 | 6 | Ci.-S. | Cu.-N. E | ------ | Ω$^2$ a. ⊤ ϟ p. |
| 7 | 60.04 | 26.8 | 33.9 | 23.5 | 85 | W quad. | .8 | 5.8 | Ci.-S. E | Cu. W | 10.7 | Ω$^2$ a. ● ⛈ ϟ ⊤ p. |
| 8 | 59.34 | 27 | 32 | 23.2 | 83 | S | .3 | 7 | Ci.-S. N | Cu. ESE | ------ | ●° ϟ a. ⛈$^2$ p. |
| 9 | 59.56 | 28 | 33 | 24.5 | 81.8 | SE | .7 | 4.2 | Ci. | Cu. ESE | ------ | ϟ$^2$ Ω$^2$ a. ⊤ a. p. |
| 10 | 59.60 | 27.4 | 33.5 | 23.7 | 84.7 | NW, SSE | .5 | 4.7 | Ci.-S. N | Cu., Cu.-N. E | ------ | ϟ Ω$^2$◯$^2$a. ⊤ ω$^2$p. |
| 11 | 59.07 | 26.9 | 32.7 | 24.4 | 87.5 | NNW ENE | .5 | 6.2 | Ci.-S. N | Cu. ESE | 7.4 | Ω° a. ● ⊤ a. p. |
| 12 | 58.66 | 28.2 | 34.2 | 24.9 | 83.2 | NW, ESE | .8 | 6 | Ci.-S. NbyE | Cu. ESE | 1.8 | ω°ѱ°Ω°a. ⊤⌒p. |
| 13 | 59.10 | 25.2 | 26.7 | 23 | 93.2 | NW quad. | .3 | 9 | Ci. | N. ENE, E | 25.4 | ● a. p. |
| 14 | 58.69 | 25.7 | 32 | 23.7 | 90.3 | NW quad. | .3 | 8.7 | Ci.-Cu. SSW | N. E | 17 | ⊕° ● a. ⛈ ● p. |
| 15 | 58.96 | 26.7 | 32.4 | 22.8 | 85.8 | E, SSE | .2 | 8 | Ci.-S. SSW, SW | Cu.-N. E | ------ | |
| 16 | 59.15 | 25.5 | 31.5 | 24 | 92.2 | NNE, S | .5 | 8.2 | Ci.-Cu. | Cu.-N. E | 26.7 | ● ⛈ a. p. |
| 17 | 58.65 | 26.7 | 31.3 | 23.2 | 88 | NW | .3 | 7.2 | Ci.-Cu. SW | Cu., Cu.-N. ENE | .8 | ϟ ≡ ●° ⊤ a. |
| 18 | 58.10 | 26.4 | 32 | 23.8 | 85.7 | Variable | .2 | 5 | Ci.-Cu., Ci.-S. | Cu.-N. ENE | ------ | ѱ° a. ⊤ ⌒$^2$ p. |
| 19 | 58.37 | 27 | 32.1 | 23.6 | 85.3 | E | .5 | 4.3 | Ci.-S. | Cu. E | ------ | Ω$^2$ a. ϟ a. p. |
| 20 | 58.41 | 27.4 | 31.9 | 24.3 | 84.8 | SE quad. | .3 | 3.8 | Ci.-S. | Cu. E | ------ | ϟ Ω$^2$ a. |
| 21 | 58.46 | 28.1 | 32.2 | 24.8 | 83.5 | SbyE | .8 | 3.7 | Ci.-S. W | Cu. E | ------ | ѱ$^2$ a. Ω$^2$ a. p. |
| 22 | 58.09 | 28.2 | 33 | 23.8 | 82.7 | SE quad. | .7 | 3.7 | Ci. W | Cu. E | 3.3 | Ω$^2$ ● a. |
| 23 | 57.89 | 28.2 | 33.1 | 24.4 | 82.7 | SSE | 1 | 4.3 | Ci.-S. WSW | Cu. E | ------ | Ω$^2$ a. p. |
| 24 | 57.63 | 28.2 | 32 | 24.6 | 81.8 | S, WNW | .8 | 3.8 | Ci.-S. SWbyS | Cu. E | ------ | Ω$^2$ a. p. |
| 25 | 58.49 | 28.5 | 33.4 | 25.2 | 82.5 | S quad. | .7 | 4.8 | Ci.-S. SW | Cu. ENE | ------ | Ω$^2$ a. ϟ a. p. |
| 26 | 58.82 | 28.7 | 33.5 | 24.5 | 80.8 | SE quad. | .7 | 4.8 | Ci.-S. SW | Cu. ENE | ------ | Ω$^2$ a. ϟ p. |
| 27 | 58.83 | 28.7 | 34.5 | 24.3 | 81.2 | WNW, S | .7 | 5.8 | Ci. SW | Cu. ENE | ------ | |
| 28 | 58.27 | 28.6 | 33.3 | 25 | 79.2 | SSE | .7 | 5.2 | Ci.-S. SW | Cu. E | ------ | Ω$^2$ a. ϟ p. |
| 29 | 57.75 | 28.7 | 33.5 | 25.3 | 79.5 | SSE | .7 | 4.3 | Ci.-S. SW | Cu. E | ------ | Ω ϟ a. |
| 30 | 57.88 | 28.8 | 35.8 | 24.5 | 78.7 | SSE | .3 | 4.7 | Ci.-S. SW | Cu. E | ------ | Ω$^2$ a. |
| 31 | 58.68 | 27.5 | 33.2 | 24 | 81.3 | SE quad. | .5 | 6.2 | Ci.-S. SW | N. E | 10.9 | Ω$^2$ a. d ● p. |
| Mean | 758.79 | 27.4 | 32.7 | 24.1 | 84.3 | ------------ | .6 | 5.7 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 108.1 | |

### CAPIZ.

[$\phi$=11° 35′ N ; $\lambda$=122° 45′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 758.97 | 27.9 | 33.4 | 24.8 | 84.2 | N | 4.7 | 6.7 | Ci. | Variable N | 0.6 | ●°⊕°◯°a. ϟ dp. |
| 2 | 58.45 | 27 | 32.4 | 23.9 | 83.7 | N quad. | 7.7 | 7.2 | Ci., Ci.-S. | Cu., N. NW | 22 | d a. p. ● ϟ p. |
| 3 | 58.10 | 27.4 | 32 | 23.8 | 83 | N | 9 | 8.3 | Ci.-S. | Fr.-Cu., Fr.-N. N | 1 | ● ⌒ a. ϟ ●° p. ⛈ |
| 4 | 59.43 | 26.1 | 32.8 | 21.9 | 89.5 | NW quad. | 4.6 | 8.5 | Ci.-S. | N. Variable | 46.9 | ●°⊤°a. ⛈$^2$●$^2$p. |
| 5 | 60.36 | 25.6 | 33 | 22 | 88.2 | Variable | 3.8 | 7.3 | Ci. S | N. SE | 30.5 | ⊕°◯°a. ●$^2$⛈ѱ°p. |
| 6 | 59.76 | 26.3 | 33.4 | 23.4 | 87 | SW quad. | 4.2 | 7.2 | Ci., Ci.-S. | Cu., Cu.-N. SW | 51.1 | ⊕° ◯° a. ●$^2$ ⛈ p. |
| 7 | 59.83 | 26.1 | 32.9 | 23.3 | 88.7 | S quad. | 4.1 | 8.2 | Ci., Ci.-S. | N. SW, N | 2 | ● a. p. ⛈ d$^2$ ѱ° p. |
| 8 | 59.02 | 26.5 | 33.8 | 23 | 86.3 | Variable | 4.6 | 6.7 | Ci. | Cu., Cu.-N. SE | 32.2 | Ω a. ⊤° ⛈$^2$ ● p. |
| 9 | 59.28 | 27.2 | 33.6 | 24.2 | 83.3 | SE | 3.5 | 6.5 | Ci.-S. | cu., cu.-N. SE, SW | 9.1 | ●° a. ● ⛈$^2$ ѱ p. |
| 10 | 59.21 | 27.3 | 33.2 | 25 | 84.2 | Variable | 3.9 | 6.2 | Ci.-S. NW | Cu. Variable | ------ | ⊤° a. p. ϟ ѱ ω p. |
| 11 | 58.42 | 28.2 | 33.7 | 24.8 | 82.8 | NE | 4.4 | 6.2 | Ci. N | Variable | ------ | ⊤° a. ѱ° ϟ ⛈ p. |
| 12 | 58.18 | 28.1 | 34.1 | 24.8 | 82 | NE | 6.4 | 7.7 | Ci. | Cu. NE | 13.7 | ⊕°◯°a. ⛈ѱ●°p. |
| 13 | 58.32 | 27.5 | 33.8 | 23.9 | 83.5 | NE | 5.9 | 8.7 | Ci., Ci.-S. | Cu. NE | 1 | ● a. ϟ ѱ° p. |
| 14 | 58.41 | 25.2 | 29.6 | 23 | 93.7 | S quad. | 3.2 | 9.2 | Ci. | N.-cf., N. E, NE | 52.9 | ⊤°a. ⛈ p. ● a. p. |
| 15 | 58.42 | 26.6 | 32.7 | 22.8 | 86.2 | Variable | 3.4 | 7.8 | Ci.-S. E | N.-cf. NE | 13.7 | ⊤° p. |
| 16 | 58.75 | 26 | 31.4 | 23.2 | 89.2 | Variable | 3.1 | 8.8 | Ci.-S. | N. SW | 1.3 | ⛈●°a. d° ϟ ѱ°p. |
| 17 | 58.08 | 27.2 | 33.3 | 23.1 | 83.8 | SW, NE | 3.8 | 4.3 | Ci. | Cu. NE | ------ | Ω a. ϟ p. |
| 18 | 57.51 | 27.2 | 33.8 | 23.3 | 84.3 | SW, NE | 3.9 | 5.3 | Ci. | Cu. NE | ------ | Ω° a. ϟ p. |
| 19 | 57.79 | 27.3 | 33.5 | 24.1 | 85.2 | SE | 4.7 | 5.7 | Ci. | Cu. NE | 3.3 | ●° a. ⛈° ϟ ● p. |
| 20 | 58.13 | 26.4 | 33.5 | 23.6 | 87 | NE quad. | 3.5 | 7.2 | Ci.-S. | N. NE, E | ------ | ⊤° a. ϟ ⛈ d° p. |
| 21 | 58 | 27 | 33.7 | 23.6 | 86 | SE, NE | 3.9 | 6 | Ci. N | Cu. NE | ------ | ⊤° ϟ p. |
| 22 | 57.52 | 28.2 | 34.8 | 24.4 | 83.7 | Variable | 4.9 | 5.7 | Ci., Ci.-S. | Cu.-N., N.-cf. NE | ------ | ϟ p. |
| 23 | 57.02 | 28.2 | 34.4 | 24.1 | 81.3 | E quad. | 4.7 | 4.8 | Ci. | Cu. E, SE | 1 | ϟ ●° p. |
| 24 | 56.66 | 28.8 | 34.7 | 26 | 81.3 | E quad. | 6 | 6.2 | Ci. | Cu. E | ------ | ϟ a. p. ⛈ p. |
| 25 | 57.56 | 28.4 | 34.8 | 25.1 | 83.3 | SW | 4.5 | 6.3 | Ci. | Cu. E | 3.8 | ⊤ ϟ d° p. |
| 26 | 57.99 | 27.4 | 34.4 | 24.3 | 85 | SW quad. | 3 | 6.3 | Ci., Ci.-S. | Fr.-N. NW | 6.9 | ● ϟ a. p. ⛈ p. |
| 27 | 57.97 | 28.2 | 35.4 | 24.6 | 84.3 | Variable | 3.8 | 6.5 | Ci.-S. | Cu. NE | .3 | ⛈ d° a. ϟ p. |
| 28 | 57.26 | 28.5 | 34.2 | 24.9 | 84.7 | S quad. | 3.6 | 5.8 | Ci. | Fr.-N. E | ------ | d a. ϟ p. |
| 29 | 57.14 | 28.3 | 34.2 | 24.1 | 82.5 | Variable | 4 | 5.3 | Ci. | Cu. NW | ------ | Ω° a. ⊤ ϟ p. |
| 30 | 57.50 | 28.4 | 34.5 | 24 | 80.3 | N quad. | 3.6 | 3.3 | Ci. | Cu. NW, N | 12.2 | ϟ ѱ p. |
| 31 | 57.83 | 28 | 34.8 | 24.4 | 84.7 | E quad. | 4.3 | 5.7 | Ci. | N.-cf. E | 13.5 | ● a. ϟ ѱ ⛈ p. |
| Mean | 758.29 | 27.3 | 33.5 | 23.9 | 85 | ------------ | 4.5 | 6.6 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 319 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | | | mm. | |
| 1 | 758.82 | 26.4 | 31.5 | 22.9 | 86.7 | NE quad. | 1.2 | 4.3 | Ci.-S. | | S.-Cu. | N | 13.2 | ● ⊤ a. ⚡ p. |
| 2 | 58.08 | 26.1 | 31.7 | 22.5 | 86.7 | Variable | 1.5 | 5.8 | ------ | | S.-cf. | NW, NE | 6.4 | ●° ⛈ ⚡ p. |
| 3 | 58.14 | 25.7 | 31.1 | 22.5 | 88.3 | NE quad. | 1.2 | 5.5 | Ci.-S. | NE | S.-Cu. | ENE, E | 1.3 | ⊤ d° ⛈ ⚡ p. |
| 4 | 59.56 | 25.2 | 30.8 | 22.9 | 90.7 | NE | 1 | 6.2 | Ci.-S. | SE | S.-Cu. | E | 5.8 | ●° ⊤° a. ⊤ ⛈ ⚡ p. |
| 5 | 60.22 | 26.2 | 31.1 | 22.9 | 86 | NE quad. | 1 | 5.3 | A.-Cu. | SE | S.-cf. | E | ------ | ⊤ ⛈ ⚡ ⊖ p. |
| 6 | 59.79 | 25.5 | 31.3 | 22.8 | 88.7 | N | 1 | 4.2 | A.-Cu. | ESE | Cu.-N. | E | 7.4 | ⛈ a. p. d ⚡ p. |
| 7 | 59.67 | 26.3 | 30.7 | 22.8 | 84.3 | Variable | 1 | 6.5 | Ci.-S. | NNW | S.-Cu. | SE | ------ | ⚡ ⊤ ●° a. ⚡ ⌣ p. |
| 8 | 59.02 | 27.1 | 31.7 | 22.7 | 81.3 | E quad. | 1 | 5.8 | Ci.-S. | NE | Cu. | | ------ | ⊖ p. |
| 9 | 59.14 | 27 | 32.7 | 23.1 | 80.8 | E quad. | 1.3 | 2 | Ci. | | Cu. | | ------ | ⊖ ⚡ p. |
| 10 | 59.23 | 26.7 | 32.7 | 22.9 | 84.2 | Variable | 1.2 | 4.2 | Ci. | N | Cu. | NE | ------ | ⚡ ○ a. ⊤ p. |
| 11 | 58.87 | 25.6 | 30.4 | 22.8 | 90 | NE | .8 | 5 | Ci., Ci.-S. | | S.-cf. | NE | 6.1 | p° ⊤ a. ⊖ p. |
| 12 | 58.44 | 26 | 32.7 | 23.1 | 88.2 | E quad. | 1 | 4.3 | Ci. | | S.-Cu. | ENE | 11.4 | p ⊤ ⚡ ⊖ p. |
| 13 | 58.67 | 26.1 | 29.9 | 23.2 | 87.5 | E quad. | .8 | 6.2 | Ci.-S. | | S.-Cu. | ENE, E | 1.3 | ⌣ d° a. |
| 14 | 58.44 | 25.1 | 30.7 | 23.1 | 90 | Variable | .5 | 7.2 | A.-Cu. | | S.-Cu. | E | 1.8 | ●° ⊤ a. |
| 15 | 58.50 | 26.5 | 31.2 | 22.8 | 84.5 | Variable | .3 | 5.3 | Ci.-S. | N | S.-Cu. | E | ------ | ⊤ p. |
| 16 | 58.99 | 25.8 | 30.5 | 23.7 | 89.7 | Variable | .7 | 6.5 | A.-Cu. | | S.-Cu. | E | 14.5 | ⊖ ⛈ a. p ⊤ p. |
| 17 | 58.27 | 25.4 | 31.2 | 22.3 | 87.3 | N | .5 | 4.3 | A.-Cu. | | S.-Cu. | E, ESE | .8 | Ω a. ⛈ d p. |
| 18 | 57.66 | 26.2 | 31.6 | 22.2 | 85.3 | S, SW | .3 | 1.7 | A.-Cu. | | Cu. | | ------ | Ω a. d p. |
| 19 | 57.88 | 26.5 | 31.7 | 22.6 | 84.8 | N | .8 | 2.7 | Ci.-S. | | S.-Cu. | ESE | 6.1 | ●° ⛈ ⚡ p. |
| 20 | 58.05 | 26.6 | 32 | 22.9 | 86 | N quad. | .8 | 2.8 | Ci.-S. | | Cu. | | ------ | ⛈ a. ⚡ p. |
| 21 | 58.07 | 26.7 | 32.7 | 23.2 | 84.7 | N | .8 | 3.7 | Ci. | NE | Cu. | | 14.5 | Ω a. ⛈ ● ⚡ p. |
| 22 | 57.68 | 26.3 | 31.3 | 23.2 | 88.8 | N | .7 | 3 | Ci. | | S.-cf. | E | 7.6 | p ⊤° p. |
| 23 | 57.59 | 26.3 | 31.6 | 23 | 86.3 | N | .7 | 3.5 | Ci.-S. | | S.-Cu. | ENE | 19.6 | Ω a. $p^2$ ⛈ ⊤ p. |
| 24 | 57.18 | 26.7 | 32.1 | 23.1 | 84.5 | N quad. | 1 | 2.7 | Ci. | | Cu. | E | ------ | Ω a. d° ⚡ p. |
| 25 | 58.16 | 26.1 | 32 | 23.1 | 88.3 | N | .7 | 4.5 | Ci., Ci.-S. | | S.-Cu. | E | 3.8 | Ω a. ⛈ d ⚡ p. |
| 26 | 58.44 | 27 | 31.7 | 22.9 | 83.8 | N | .5 | 4.3 | Ci. | NE | S.-Cu. | E | ------ | ⊤ ⚡ p. |
| 27 | 58.41 | 28.1 | 32.9 | 23.7 | 80.5 | Variable | .7 | 4.7 | Ci.-S. | NE | Cu. | | ------ | |
| 28 | 57.99 | 28.1 | 33.1 | 24 | 78.8 | Variable | .7 | 4 | Ci. | N, NE | S.-Cu. | E | ------ | ⚡ p. |
| 29 | 57.40 | 27.8 | 32.7 | 23.6 | 80.3 | N | 1 | 3.7 | Ci. | NE | Cu. | | ------ | ⊤ ⚡ p. |
| 30 | 57.62 | 27.7 | 33 | 23.3 | 80.2 | N, S | .7 | 4 | Ci.-S. | ESE | Cu. | | ------ | ⊤ ⚡ p. |
| 31 | 58.19 | 27.6 | 32.6 | 23.9 | 81.2 | N quad. | .8 | 5.2 | A.-Cu. | SE | S.-Cu. | | ------ | |
| Mean | 758.46 | 26.5 | 31.7 | 23 | 85.4 | ------ | .8 | 4.5 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 121.6 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | | | mm. | |
| 1 | 758.91 | 27.5 | 34.7 | 21.2 | 81.9 | NNE | 5.6 | 4.5 | Ci. | N | Cu. | NE | 5.6 | ⌒° ≡° a. ⌒ p. |
| 2 | 58.12 | 26.5 | 32.4 | 23.1 | 86.7 | NE | 7.1 | 9.2 | A.-Cu. | NE | N., Cu.-N. | W, N | 7.1 | ● a. p. ⚡ p. |
| 3 | 58.61 | 26.1 | 31.7 | 23.2 | 86.5 | NE quad. | 7.1 | 7.3 | Ci.-S. | | Cu.-N. | NNE | 3.3 | d a. ● ⚡ p. |
| 4 | 59.66 | 27 | 33.5 | 21.4 | 86 | NNE, NE | 3.8 | 4.2 | Ci.-S. | | Cu.-N. | ESE | 9.7 | p ≡° a. ● ⚡ p. |
| 5 | 60.45 | 26.4 | 32.8 | 23.2 | 88.7 | ENE | 3.9 | 6.5 | Ci.-S. | | N., Cu.-N. | ENE | 6.4 | ● a. |
| 6 | 59.89 | 26.8 | 34.2 | 22.5 | 84.8 | ENE, NE | 4.3 | 6.3 | A.-Cu. | SE | N. | NE | 9.4 | ○ ● ≡° a. ⚡ p. |
| 7 | 59.66 | 26.2 | 31.9 | 22.9 | 85.8 | SSW | 3.3 | 4.3 | A.-Cu. | | N., Cu. | SW, SSW | ------ | ● a. ⚡ p. |
| 8 | 58.84 | 26.5 | 34.1 | 21 | 84.5 | NE | 3.1 | 3.7 | Ci. | | Cu. | S | ------ | ≡° a. ⚡ p. |
| 9 | 59.20 | 27.2? | 34.1 | 22 | 84.7? | NE | 1.7 | 2.5 | Ci. | | Cu. | SSE | ------ | ≡° a. |
| 10 | 59.29 | 27.2 | 34.4 | 22.4 | 82.5 | ENE | 2.9 | 3.3 | Ci. | | Cu. | ESE | ------ | ⊤ a. |
| 11 | 58.70 | 28.4 | 35 | 22.9 | 80.8 | NE quad. | 6.3 | 2.7 | Ci. | | Cu. | | ------ | ≡° a. ⚡ p. |
| 12 | 58.46 | 29.3 | 34.6 | 25.5 | 76.3 | NE quad. | 7 | 3.5 | Ci. | | Cu. | ENE | ------ | d ⊤ a. ⚡ p. |
| 13 | 58.62 | 28.9 | 34.1 | 24.3 | 76.7 | NE | 8.1 | 5.2 | Ci.-S. | | Cu. | ENE | ------ | |
| 14 | 58.39 | 27 | 34.5 | 23.1 | 82.5 | NE quad. | 5.5 | 6.3 | Ci. | | Cu. | ENE | 49 | ● p. |
| 15 | 58.29 | 28 | 33.7 | 23.5 | 81 | NE quad. | 5.5 | 4 | Ci. | | Cu. | | 11.9 | ⚡ p. |
| 16 | 58.76 | 26.6 | 33 | 23.1 | 85 | NE, ENE | 5 | 3.7 | Ci.-S. | | Cu. | E | 10 | ● a. ⚡ p. |
| 17 | 58.18 | 27.5 | 34.8 | 22.2 | 80.8 | NE | 4.6 | 1.2 | ------ | | Cu. | | ------ | ● a. ⚡° p. |
| 18 | 57.66 | 27.3 | 34.3 | 21.4 | 80 | NE quad. | 5 | 1.5 | Ci., Ci.-S. | | Cu. | E | ------ | ≡° a. |
| 19 | 57.89 | 27.7 | 34.6 | 21 | 77.5 | NE | 6.8 | 1.2 | Ci. | | Cu. | | ------ | ⚡ p. |
| 20 | 57.76 | 28 | 34.5 | 23.8 | 83 | NE | 3.9 | 5.7 | Ci.-S. | | Cu., Cu.-N. | ESE, E | ------ | ≡° a. ⚡ ⛈ p. |
| 21 | 57.96 | 28.2 | 35.1 | 22.1 | 79.5 | NE | 5.3 | 1.5 | Ci. | | Cu. | | 2 | ⚡° p. |
| 22 | 57.65 | 28.7 | 34.7 | 24 | 78.8 | NE | 7.7 | 1.3 | Ci. | | Cu. | | ------ | ●° a. ⚡° p. |
| 23 | 57.63 | 28.3 | 34.6 | 22.5 | 78.8 | NE | 6 | 2 | Ci. | | Cu. | | ------ | ⚡° p. |
| 24 | 57.07 | 28.6 | 35.2 | 22.9 | 79.8 | NE | 5.5 | 1.8 | Ci. | | Cu. | E | ------ | ⚡ p. |
| 25 | 57.95 | 28.4 | 35 | 23.1 | 81 | NE, ENE | 4.6 | 2.5 | Ci. | | Cu. | | ------ | ⚡° p. |
| 26 | 58.37 | 28.7 | 35.6 | 23.1 | 77.2 | ENE | 4.3 | 1.8 | Ci. | | Cu. | | ------ | ⚡ p. |
| 27 | 58.49 | 28.5 | 35.7 | 23.2 | 78.8 | NE | ------ | 2.5 | Ci. | | Cu. | | 1.3 | ⚡° p. |
| 28 | 57.92 | 29.4 | 35.6 | 23.6 | 73.3 | NE | 6.7 | 2.7 | Ci. | | Cu. | | ------ | ● a. ⚡° p. |
| 29 | 57.18 | 28.5 | 35.7 | 22.5 | 78.7 | ENE, E | 4 | 3.2 | Ci., Ci.-S. | | Cu. | W | ------ | ⊤ p. |
| 30 | 57.56 | 28.5 | 35.9 | 22.5 | 78 | NE | 4.5 | 1 | Ci. | | Cu. | | .8 | ≡° a. ⚡ p. |
| 31 | 58.05 | 28.5 | 35.2 | 24.4 | 78.2 | NE | 9.1 | 5.5 | A.-Cu. | E | Cu. | E | ------ | d a. p. ⚡° p. |
| Mean | 758.42 | 27.8 | 34.4 | 22.8 | 81.2 | ------ | 5.3 | 3.6 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 116.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | | | *mm.* | |
| 1 | 759.39 | 27.5 | 29 | 23 | 81.7 | N, NW | 20.4 | 4.2 | A.-Cu. | NE | S.-Cu. | N | 3.1 | d$^2$ a. ☈ ● ↯° p. |
| 2 | 58.99 | 27.2 | 29 | 24 | 78.7 | NE | 28.8 | 9 | A.-Cu. | ENE | S.-Cu. | NE | 11.4 | ● ↯ p. |
| 3 | 88.84 | 27.8 | 29.6 | 24.4 | 77.2 | NE | 28.6 | 7.3 | A.-Cu. | E | S.-Cu. | NE | .5 | ●° d° a. ↯° p. |
| 4 | 59.72 | 27.2 | 29 | 23.6 | 79.8 | N | 16.7 | 6.8 | Ci. | | S.-Cu. | NE | ------ | d$^2$ a. ☈° ↯ ⊕°p. |
| 5 | 60.53 | 26.2 | 31.5 | 22.7 | 88.5 | SW | 7.6 | 6.5 | Ci. | | S.-Cu. | NE | 9.4 | ☈ ● ↯ p. |
| 6 | 60.05 | 26.1 | 31 | 22.8 | 88.2 | NW | 8 | 6.8 | Ci. | | S.-Cu. | NE | 39.1 | ☈ ● d° p. |
| 7 | 59.63 | 25.7 | 29.2 | 22.6 | 87.3 | SW | 7.7 | 9.2 | A.-Cu. | E | S.-Cu. | Variable | 1 | d$^2$ d° ☈ ↯ ⊍° p. |
| 8 | 58.77 | 26.3 | 31.4 | 21.4 | 84 | SW | 8.8 | 4.7 | Ci. | N | S. | SW | ------ | Ω°a⊕°☈°⊍$^2$↯p. |
| 9 | 59.20 | 27 | 31.7 | 22.1 | 81.7 | E, SW | 9.8 | 5.8 | Ci.-Cu. | NE | Cu.-N. | Variable | ------ | ☈° ↯ p. |
| 10 | 59.38 | 26.2 | 32 | 22.4 | 85.7 | SW | 9.1 | 8.2 | A.-Cu. | NE | S.-Cu. | SW | 5.1 | ⊕° Ω°d a. ☈ ⊕°p. |
| 11 | 59.04 | 27.2 | 30 | 22.2 | 83.2 | N | 12.6 | 6 | Ci. | | Cu. | NE | ------ | Ω$^2$ ≡°a☈↯°⊕$^2$p. |
| 12 | 58.61 | 28 | 31.4 | 23.4 | 80.3 | N quad. | 13.8 | 5.3 | Ci. | S | Cu. | E | ------ | ⊤° ⊕° p. |
| 13 | 58.44 | 27.7 | 29.6 | 25.2 | 83.8 | NW | 14.3 | 8 | Ci. | | Cu. | E | 8.4 | ⊕°●°◯°a ☈°a.p. |
| 14 | 58.30 | 26.6 | 31.3 | 23 | 88.2 | SW | 9.6 | 6.8 | Ci. | | Cu. | E | ------ | ● a. ☈$^2$ d° p. |
| 15 | 58.20 | 26.9 | 31.4 | 22.3 | 83.2 | Variable. | 12.2 | 4.7 | A.-Cu. | E, SE | Cu. | NE, E | 10.2 | Ω$^2$ a. ☈$^2$ ● p. |
| 16 | 58.91 | 25.4 | 28.1 | 22.1 | 91.7 | WSW, N | 10.1 | 9 | Ci. | | N. | Variable | 24.1 | ●° a.p.☈ a. ⊕° p. |
| 17 | 58.18 | 26.1 | 30.8 | 21.5 | 84.8 | W quad. | 10.5 | 4.2 | Ci. | NW | S.-Cu. | ENE | ------ | Ω$^2$ ≡° a. ☈° ↯ p. |
| 18 | 57.57 | 27.4 | 31.7 | 22.5 | 82 | SW | 8.7 | 4.3 | A.-Cu. | E, SE | Cu. | E | ------ | Ω° ≡° a. ↯° p. |
| 19 | 57.80 | 27.6 | 32.8 | 22.6 | 82 | SW | 7.9 | 3.5 | A.-Cu. | NNE, ESE | S.-Cu. | SE | 1.5 | ≡° a. ☈° d$^2$ ↯ p. |
| 20 | 58.04 | 26.9 | 32 | 22.6 | 83.7 | SW | 7.5 | 6 | Ci. | | S.-Cu. | NE, S | 22.4 | ≡°a.☈ ●$^2$d$^2$p. ↯° |
| 21 | 57.91 | 27.2 | 33.4 | 22.9 | 83.3 | SW | 9.8 | 5.2 | Ci. | | Cu. | SSE | 2.8 | d$^2$ ☈ ●° ↯$^2$ p. |
| 22 | 57.67 | 28 | 31.2 | 23.1 | 82 | N | 10.2 | 5.8 | Ci. | | Cu. | NE, E | ------ | ☈ d° ↯$^2$ p. |
| 23 | 57.43 | 28.1 | 32.9 | 23.8 | 81.7 | SW | 9.4 | 5.8 | Ci. | E | S.-Cu. | NE, E | ------ | Ω° ≡° ◯° a. |
| 24 | 57.09 | 28 | 33.7 | 22.4 | 80.7 | SW | 8.5 | 3.5 | Ci. | | S.-Cu. | SE | ------ | Ω ≡ a. ☈ ↯ p. |
| 25 | 57.79 | 28.4 | 34 | 23.2 | 80.8 | SW | 8.7 | 6.3 | Ci. | E | Cu.-N. | SE | ------ | Ω° ≡° a. ↯ p. |
| 26 | 58.11 | 28.1 | 33.9 | 23.5 | 80.5 | SW | 7.9 | 4.8 | Ci. | | Cu. | SE | ------ | Ω° ≡°a.☈° ↯ °p. |
| 27 | 58.44 | 28.3 | 33.7 | 23.5 | 81.7 | SW | 6.8 | 5.5 | Ci. | | Cu.-N. | SE | ------ | ☈ ≡° d$^2$ a. ↯ p. |
| 28 | 57.86 | 28.4 | 33.7 | 23.6 | 82 | SW | 8.3 | 5 | Ci. | E | Cu., Cu.-N. | SE | ------ | ≡° Ω° a. ☈° ↯p. |
| 29 | 57.06 | 28.6 | 34 | 23.6 | 76.3 | SW | 10.3 | 4.7 | Ci. | SSE | Cu. | SW | ------ | ↯ p. |
| 30 | 57.24 | 28.5 | 35.4 | 23.6 | 78.2 | SW | 10.2 | 5 | Ci. | E | Cu. | SW | ------ | ↯° p. |
| 31 | 58.40 | 27.6 | 32.7 | 23.5 | 82.8 | NE, SW | 16.1 | 7.7 | Ci.-S. | E | Cu. | E | 50.6 | Ω°●$^2$a☈°●°↯°p. |
| Mean | 758.47 | 27.3 | 31.6 | 23 | 82.8 | ------------ | 16.6 | 6 | ------------ | | ------------ | | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | | ------------ | | 189.6 | |

### PARACALE

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | | | *mm.* | |
| 1 | 759.42 | 27.9 | 32.8 | 24.2 | 79.3 | NNE | 8.7 | 4 | Ci. | | Cu. | NNE | 1.5 | Ω d° a. ↯ p. |
| 2 | 59.20 | 25.4 | 27.8 | 23.3 | 89 | N quad. | 8.6 | 9.5 | Ci.-S. | | Cu.-N. | N quad. | 108.6 | ●$^2$d ⊤ a. p. ↯ p. |
| 3 | 59.18 | 27.8 | 31.3 | 24.3 | 75.8 | NE | 15.4 | 8.5 | Ci.-S. | | Cu. | NE | ------ | ↯ p. |
| 4 | 59.80 | 26.8 | 31.7 | 23.8 | 84.5 | NNE | 6.5 | 6.8 | Ci.-S. | | Cu. | Variable | 7.8 | d a. ● ⌒° ⊤ ↯ p. |
| 5 | 60.65 | 26.5 | 31.7 | 23 | 86.2 | ESE, NNE | 6 | 4.8 | Ci. | | Cu. | E | 5.9 | Ω$^2$ ≡° ●° d° a. |
| 6 | 59.97 | 26.7 | 31.3 | 23.7 | 87.8 | ENE | 6.4 | 7 | Ci., Ci.-S. | | Cu. | E | 12.5 | Ω ⌒° a. ↯ p. ● |
| 7 | 59.64 | 26.4 | 31.5 | 23.4 | 88.7 | E, SW | 4.9 | 6.5 | Ci., Ci.-S. | | Cu. | E | 3.3 | Ω$^2$ a. ● ⊤ ↯ p. |
| 8 | 58.79 | 25.9 | 31.6 | 22.9 | 90.7 | E | 3.6 | 7.7 | Ci. | | Cu., S.-Cu. | SW | 23.3 | Ω$^2$ a. ● ⊤$^2$ p. |
| 9 | 59.34 | 27 | 32.3 | 23.3 | 86 | Calm | 3.4 | 7.7 | Ci.-S. | | Cu. | S | .5 | Ω$^2$ ☈ a. ●° ↯ p |
| 10 | 59.34 | 27.1 | 32.7 | 23.8 | 86.7 | NNE | 4.6 | 8.7 | Ci.-S. | | Cu. | E | 6.1 | Ω ● a. d° ⊕°p. ☈ |
| 11 | 59.11 | 27.8 | 32.8 | 23.5 | 83.3 | NE quad. | 6.6 | 4.3 | Ci., Ci.-S. | | Cu. | E | ------ | Ω$^2$ a. ⊤ ↯ p. |
| 12 | 58.70 | 28.1 | 33.2 | 24.8 | 83.7 | ENE | 6.3 | 7.5 | Ci.-S. | | Cu. | E | 13.3 | Ω d° a. ↯ ●° p. |
| 13 | 58.64 | 27.9 | 32.6 | 23.3 | 84.7 | E | 5.8 | 8.7 | Ci.-S. | | Cu. | E | 7.6 | ● a. p. ↯ p. |
| 14 | 58.55 | 27.8 | 32.4 | 24 | 83.7 | ESE, NE | 5.7 | 6 | Ci.-S. | | Cu. | E | ------ | Ω a. p. |
| 15 | 58.56 | 27.5 | 32.3 | 23.5 | 84 | NNE | 7.2 | 4.2 | Ci. | | Cu. | E | 21.9 | Ω$^2$ a. ☈ ↯ ⌒° ● p. |
| 16 | 59.12 | 26.2 | 30.8 | 24 | 91.5 | NE | 3.9 | 9.3 | Ci.-S. | | Cu., S.-Cu. | E | .5 | Ω d° ● ⊤ a. ☈ p. |
| 17 | 58.30 | 27.4 | 32.3 | 23.1 | 85.3 | NE | 5.5 | 3.8 | Ci. | | Cu. | E | ------ | Ω$^2$ ●° a. ↯ p. |
| 18 | 57.69 | 27.6 | 32.7 | 23 | 81.8 | ENE, NE | 5.4 | 2.3 | Ci. | | Cu. | E | ------ | Ω a. |
| 19 | 57.76 | 28.2 | 33 | 23.2 | 79 | NNE, E | 5.8 | 3.2 | Ci. | | Cu. | E | 2.5 | Ω a. ↯° ● p. |
| 20 | 57.98 | 27.2 | 33 | 23 | 86.8 | ENE | 4.3 | 2.5 | Ci. | | Cu. | ESE | 1.5 | Ω$^2$ ↯°a. ●° ⊤ ↯ p. |
| 21 | 58.05 | 27.9 | 32.8 | 23 | 82.3 | N, NE | 4.4 | 1.3 | Ci. | | Cu. | S | ------ | Ω$^2$ a. ⊤ ↯ p. |
| 22 | 57.81 | 28.4 | 33.3 | 23.9 | 82.7 | NE | 5.8 | 2.8 | Ci. | | Cu. | E | ------ | Ω a. ⊤ ↯ p. |
| 23 | 57.50 | 28.2 | 33.1 | 24 | 82.8 | E | 5.5 | 5 | Ci. | | Cu. | E, ESE | ------ | Ω a. ↯ p. |
| 24 | 57.17 | 27.9 | 33.7 | 23.6 | 84.2 | NE, NNE | 5.7 | 3.7 | Ci. | | Cu. | ESE | ------ | Ω a. ⊤ ↯$^2$ d° p. |
| 25 | 58 | 28.2 | 33.5 | 24.1 | 80.8 | NNE, E | 5.2 | 3.5 | Ci. | | Cu. | SE quad. | ------ | Ω a. ↯ p. |
| 26 | 58.24 | 28 | 34 | 23.9 | 82 | NNE | 5.4 | 3.3 | Ci. | | Cu. | SE | ------ | Ω a. ⊤ ↯ p. |
| 27 | 58.50 | 28.8 | 34 | 23.2 | 81 | ENE | 5.3 | 4.5 | Ci. | | Cu. | SE quad. | ------ | Ω d a. ⊤ p. |
| 28 | 58.01 | 28.7 | 34 | 24.5 | 80.3 | ENE | 5.6 | 3.3 | Ci. | | Cu. | ESE | ------ | Ω a. ↯ a. p. |
| 29 | 57.15 | 27.7 | 33.8 | 23.6 | 82 | NNE | 5.6 | 4.3 | Ci. | | Cu. | W quad. | .5 | Ω a. ⊤ ↯ d° ●° p. |
| 30 | 57.48 | 29 | 35.2 | 24 | 80 | NE | 5 | 2.5 | Ci. | SSE | Cu. | S | ------ | Ω a. ⊤ ↯° p. |
| 31 | 58.56 | 27 | 33.4 | 24.4 | 88.7 | ESE, NNE | 6.1 | 8.2 | Ci., Ci.-S. | | Cu. | E | 44.6 | ● d a. ● ⊤ ↯ p. |
| Mean | 758.59 | 27.5 | 32.6 | 23.7 | 84 | ------------ | 5.9 | 5.3 | ------------ | | ------------ | | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | | ------------ | | 261.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Perct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 759.07 | 27.6 | 34.5 | 23.4 | 80.7 | Variable | 1 | 6 | Ci.-S. | Cu. SSW | 21.9 | Ω$^2$ a. ●$^2$ ☈ p. |
| 2 | 58.63 | 27.4 | 33.2 | 23.9 | 76.5 | E quad. | 1.7 | 5.8 | Ci. SE | Cu. NE | ------ | ≡° a. |
| 3 | 58.38 | 27.2 | 32 | 22.2 | 72.2 | ESE, NW | 2.2 | 4 | Ci. | Cu. NE | ------ | Ω$^2$ a. |
| 4 | 59.30 | 27.8 | 33.1 | 22.5 | 69.2 | ESE, NNW | 2 | 6.3 | Ci.-S. SE | Cu. E | ------ | Ω a. d° p. |
| 5 | 60.16 | 28.1 | 32.2 | 24 | 70 | E, ESE | 2.2 | 4.8 | Ci. SE | Cu., N. E | ------ | d° a. Ω ☇ p. |
| 6 | 59 68 | 27.2 | 32.2 | 22.9 | 77.3 | ESE, NE | 1.8 | 6.7 | A.-Cu. E | Cu. ESE, E | 1.8 | Ω a. ☇ T ● p. |
| 7 | 59.31 | 26 | 31 | 22.9 | 83.7 | E quad. | 1.8 | 8.2 | Ci.-S. | N. S, SE | 1.8 | ● ☈ d ψ$^2$ ↙° p. |
| 8 | 58.58 | 26.7 | 32.8 | 22.5 | 78.8 | S quad. | 1.5 | 7.7 | Ci.-S. | Cu., N. SE, NW | ------ | ≡ a. ψ p. |
| 9 | 58.99 | 26.5 | 33.7 | 22.8 | 82.7 | ENE, SSW | 1.7 | 7.2 | Ci. | N. SW | 6.9 | Ω a. ● ☈ p. |
| 10 | 59.14 | 26 | 33.3 | 22.5 | 83.8 | E, NE | 1.3 | 7.3 | A.-Cu. E | Cu. E | 32 | ≡ a. ●$^2$ ☈ ⊕$^2$ p. |
| 11 | 58.82 | 26.8 | 33.8 | 22.6 | 81.8 | E quad. | 1.3 | 6.2 | Ci.-S. SE | N., Cu. NE, E | .5 | ≡ a. d ☈ p. |
| 12 | 58.57 | 27.3 | 34 | 22.7 | 80.2 | NE, NNW | 1.2 | 7.2 | Ci.-S. SE | Cu. E quad. | ------ | Ω$^2$○°a. T ☇ ψ°p. |
| 13 | 58.23 | 28.1 | 33 | 23.5 | 74.9 | E quad. | 1.7 | 7.2 | A.-Cu. E | Variable SE quad. | ------ | Ω ≡° a. T ☇ p. |
| 14 | 58.02 | 27.1 | 34 | 22.6 | 79.7 | E quad. | 1.7 | 6.2 | Ci. | Cu.-N. SE | 4.3 | Ω$^2$ a. ●$^2$ ☈ ⊕$^2$ p. |
| 15 | 58.21 | 27.9 | 34.2 | 23 | 74.2 | NE, SE | 1.5 | 5.7 | A.-Cu. NE | Cu.-N. ESE | ------ | Ω$^2$ a. T ☇ ⊕° p. |
| 16 | 58.66 | 27.3 | 33 | 23 | 75.8 | SE | 2 | 7.7 | Ci.-S. E | Cu.-N. SE | ------ | ⊕° a. ○° ☇ p. |
| 17 | 57.87 | 27.4 | 34.3 | 21.4 | 78 | SE | 1.5 | 6.3 | Ci.-S. | Cu. E | 74.1 | Ω° a. d ●$^2$ ☈ p. |
| 18 | 57.25 | 26.8 | 33.2 | 21.9 | 82.7 | SE, SSW | 1.5 | 7.7 | A.-Cu. NE | N. SE | ------ | ☈ ☇ p. |
| 19 | 57.34 | 27.7 | 33.6 | 22.1 | 80.2 | S quad. | 1.2 | 6.8 | Ci. NW | Cu. ESE | ------ | ≡ a. T p. |
| 20 | 57.58 | 28.2 | 33.9 | 23 | 76.8 | S quad. | 1.3 | 3.7 | Ci. | Cu., Cu.-N. SE | ------ | Ω ≡° a. ☇ p. |
| 21 | 57.68 | 28.8 | 35 | 24.9 | 75 | SE | 1 | 7.7 | Ci.-S. NE | Cu.-N. SE | ------ | ☇ ☈ d° a. p. |
| 22 | 57.44 | 28.2 | 34.5 | 24 | 79 | NE, SE | 1.2 | 7 | Ci.-S. N | N. SE | 6.3 | ☇ a. p. T ●$^2$ p. |
| 23 | 57.06 | 28.4 | 35.3 | 23.6 | 77 | E quad. | 1 | 6.2 | Ci. NE | Cu. SE | 1.3 | ≡a. ↙°⌒°☈●°p. |
| 24 | 56.70 | 29 | 34.2 | 23.5 | 74.5 | SE, NE | 1.2 | 5.2 | Ci. NE | Cu. SE | 1 | d$^2$ ☇ p. |
| 25 | 57.52 | 29.7 | 34.8 | 25.5 | 71.8 | E quad. | 1.5 | 5.8 | Ci. | Cu. SE, ESE | ------ | ≡° a. T ☇ d° p. |
| 26 | 58.15 | 28.3 | 34.8 | 23.3 | 78.3 | SSW, NE | 1.8 | 7 | Ci. S. SE | Cu.-N., Cu. S quad. | 31.5 | Ω° a. ☈ ●$^2$ p. |
| 27 | 58.21 | 27.8 | 34.2 | 23.8 | 78.5 | SSE, ENE | 1 | 6.2 | Ci.-S. NE | Cu., S.-Cu. SE | ------ | T ☇ p. |
| 28 | 57.64 | 28.4 | 34.9 | 23.5 | 77.7 | SSE | 1.2 | 6 | Ci. NE | Cu.-N. SE | 50.8 | Ω a. ☈ ●$^2$ p. |
| 29 | 57.06 | 27.5 | 33.2 | 24.4 | 84.7 | S quad. | 1.2 | 7.3 | Ci. | N. WSW | 2 | ☈ d$^2$ T ☇ p. |
| 30 | 57.30 | 28.2 | 34.2 | 24.1 | 79.3 | S quad. | 1.2 | 5.8 | Ci.-S. NE | Cu. SW | ------ | Ω ≡° ○° a. T ☇ p. |
| 31 | 58.34 | 27.2 | 33.4 | 23.6 | 83.5 | NE | 1.2 | 6.8 | Ci.-S. | S.-Cu. E | 3.5 | Ω a. ☈ ☇ d° p p. |
| Mean | 758.22 | 27.6 | 33.7 | 23.2 | 78 | ------------ | 1.5 | 6.4 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 239.7 | |

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 759.06 | 28.1 | 33.6 | 23.7 | 83.3 | NW quad. | 9.5 | 4.5 | Ci. | S.-Cu. | 3.6 | ⌒$^2$ ☇ T p p. |
| 2 | 58.30 | 28.5 | 36 | 23.7 | 80.3 | SE quad. | 8.6 | 4.7 | Ci.-S. | S.-Cu. SE | 9.9 | ☇ p p. |
| 3 | 58.14 | 28.1 | 35.7 | 23.3 | 78.8 | SE quad. | 11.7 | 4.7 | Ci. | S.-Cu. E | 10.9 | ☇ T p p. |
| 4 | 59.02 | 28.6 | 37 | 22.8 | 75.8 | SE quad. | 8.4 | 5.3 | Ci. | S.-Cu. | ------ | ⊕ p. |
| 5 | 59.78 | 28.4 | 36.7 | 23.9 | 79 | Variable | 8.9 | 6.3 | Ci. | Cu., S.-Cu. | 6.1 | ☇ p p. |
| 6 | 59.36 | 27.8 | 36.5 | 23.4 | 82.3 | S quad. | 10.3 | 5 | Ci. | Cu., N. | 98.8 | ☇$^2$ ☈ p ●$^2$ p. |
| 7 | 59.18 | 25.7 | 35.2 | 22.6 | 87 | SE | 10.1 | 8.2 | Ci., A.-Cu. | Fr.-Cu. SE | 4.3 | p° ⊕° p. |
| 8 | 58.31 | 27.3 | 34.4 | 22.6 | 81.2 | SE | 9.9 | 7.7 | Ci.-S., A.-Cu. | Fr.-Cu. SE | ------ | ☇ ⊕ p. |
| 9 | 58.98 | 26.5 | 34.8 | 23.6 | 88.7 | SE | 7.2 | 8.3 | Ci.-S., A.-Cu. | S.-Cu., N. | 3.6 | T° ⌒° p ⊕° p. |
| 10 | 58.94 | 27.5 | 33.4 | 23.2 | 83.3 | Variable | 8.8 | 7 | A.-Cu. | Cu., S.-Cu. | .3 | ☇ d° p. |
| 11 | 59 | 27.6 | 33.9 | 22.8 | 82 | SE, NW | 9.8 | 5.8 | Ci., Ci.-S. | Cu., S.-Cu. | ------ | T a. ☇° p. |
| 12 | 58.38 | 28.4 | 34.9 | 24.1 | 80.3 | SE, NW | 10.6 | 5.5 | Ci., Ci.-S. | S.-Cu. | ------ | T° p. |
| 13 | 58.21 | 27.3 | 36.4 | 23.2 | 86.5 | SE, S | 9.4 | 5.5 | A.-Cu. | Cu., S.-Cu. | 51.6 | ☇ ☈ p$^2$ p. |
| 14 | 57.90 | 27.8 | 36.1 | 23.2 | 83.7 | SE | 9.7 | 5 | Ci., A.-Cu. | Cu., S.-Cu. | ------ | ☇ p. |
| 15 | 58.08 | 28.5 | 34.8 | 23.2 | 81.8 | SE, NW | 10.6 | 5 | Ci. | Cu., S.-Cu. | ------ | T° ☇ p. |
| 16 | 58.36 | 28.8 | 35.6 | 23.8 | 80.3 | SE quad. | 10.5 | 7.3 | Ci. | Cu., S.-Cu. | ------ | ☇ T° p. |
| 17 | 57.70 | 28.3 | 36.1 | 22.9 | 81 | SE, S | 10.6 | 6 | Ci. | Cu. | 2 | ☇ T° p p. |
| 18 | 57.22 | 27.5 | 35.5 | 22.9 | 84.8 | SE, NW | 10 | 7.2 | Ci.-S. N | Cu., S.-Cu. | 5.9 | ☇ T p p. |
| 19 | 57.13 | 28.7 | 36.1 | 23.1 | 79.8 | Variable | 9.9 | 6.5 | Ci.-S. | Cu., S.-Cu. | ------ | d° a. |
| 20 | 57.32 | 29.4 | 36.4 | 23.5 | 77.3 | SE quad. | 10.6 | 2 | Ci. | Cu., S.-Cu. | ------ | ☇° T° p. |
| 21 | 57.52 | 29.2 | 35.6 | 24.6 | 81.7 | SE, NW | 10.6 | 6.5 | Ci. | Cu. SE | ------ | ☇ T d° p. |
| 22 | 57.47 | 28 | 35.1 | 24.1 | 83.5 | Variable | 9.7 | 7 | Ci. | Fr.-Cu. SE | 26.4 | ☇ ☈$^2$ p p. |
| 23 | 57.03 | 28.8 | 34.1 | 24.1 | 82.5 | NW | 9.6 | 7.2 | Ci. | S.-Cu. | ------ | |
| 24 | 56.53 | 29.8 | 36.9 | 24.6 | 78.8 | SE quad. | 11.1 | 4.3 | Ci. | Cu., S.-Cu. | ------ | ☇ p. |
| 25 | 57.30 | 30.1 | 36.4 | 25 | 78.3 | Variable | 8.8 | 4.5 | Ci. | S.-Cu. | ------ | ☇° p. |
| 26 | 57.87 | 29.5 | 35.3 | 24.2 | 79.5 | SE, NW | 10.5 | 5.2 | Ci. | S.-Cu. | ------ | ☇$^2$ T p. |
| 27 | 58.03 | 28.8 | 36.5 | 24.7 | 82.8 | SE | 8.6 | 7 | Ci. | S.-Cu. | 25.4 | ☇ ☈$^2$ p$^2$ p. |
| 28 | 57.33 | 29 | 36.4 | 24 | 81.8 | SE, NW | 10.5 | 5.2 | Ci , Ci.-S. | Cu., S.-Cu. | ------ | ☇ p. |
| 29 | 56.78 | 29.4 | 34.7 | 24.3 | 80.7 | SE | 9.6 | 7.2 | Ci.-S. | S.-Cu. | ------ | ☇ ☈ p. |
| 30 | 57.06 | 28.8 | 35.1 | 24.2 | 82.5 | NW | 7.8 | 7 | Ci.-S. | Cu., S.-Cu. | ------ | ☇ T p. |
| 31 | 58.24 | 28.3 | 34.3 | 24.3 | 82.8 | Variable | 6.1 | 7.3 | Ci.-S., A.-Cu. | S.-Cu. | .3 | ☇° ⊕ T d° p. |
| Mean | 758.05 | 28.3 | 35.5 | 23.7 | 81.7 | ------------ | 9.6 | 6 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 249.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N ; $\lambda$=119° 53′ E ; barometer above sea, 7.5 meters ; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 759.05 | 28 | 31.8 | 23.6 | 78.3 | Variable | 2.5 | 7 | Ci.-S. | Cu.-N., Cu. | ------ | Ω a. ⚡ p. |
| 2 | 58.20 | 27.7 | 32.4 | 24.5 | 81 | SSE, W | 2.7 | 5.2 | Ci.-S. | Cu.-N. | ------ | Ω a. ⊤ p. |
| 3 | 58.04 | 28 | 34.1 | 22.7 | 77.7 | SSE | 2.3 | 6 | Ci.-S. | Fr.-Cu. S | ------ | Ω a. ⚡ p. |
| 4 | 58.98 | 28.1 | 33.1 | 23.5 | 76.5 | SE quad. | 2.3 | 7.7 | Ci.-S. | S.-Cu. | 39.1 | Ω° a. |
| 5 | 59.76 | 28 | 34 | 23.4 | 79.7 | S quad. | 2.3 | 9.7 | Ci.-S. | Cu. NW | .3 | ☈$^2$ ●$^2$ a. ☈ ● ⚡ p. |
| 6 | 59.28 | 27.7 | 33.2 | 23.4 | 80 | S, WNW | 2.5 | 9 | Ci.-S. | Cu. | 23.9 | ☈ ● p. |
| 7 | 58.77 | 26.2 | 31.4 | 23.5 | 87 | S quad. | 2.3 | 10 | Ci.-S. | S.-Cu., Cu.-N. | 4.8 | ⚡ a. ☈ ● p. |
| 8 | 58.06 | 27.3 | 32.1 | 22.9 | 81.5 | S, WSW | 2.2 | 10 | Ci.-S. | Fr.-Cu. S | 4.9 | ● ☈ p. |
| 9 | 58.74 | 27.6 | 32 | 24.5 | 83.7 | S quad. | 2 | 9.5 | Ci.-S. | Cu.-N. | 8.1 | ● ☈ a. p. ⊕$^2$ p. |
| 10 | 58.95 | 27.2 | 31.6 | 24 | 83.5 | NW quad. | 2.2 | 8.7 | Ci.-S. | Cu. NW | ------ | ⊍° p. |
| 11 | 58.71 | 28.2 | 32.6 | 24 | 78.2 | SE, NNE | 2.8 | 9 | Ci.-S. | Cu. NNE | ------ | Ω a. ⊤ ⊍$^2$ p. |
| 12 | 58.33 | 28 | 33.1 | 23.6 | 78.8 | SE quad. | 2.5 | 6.2 | Ci.-S. | Cu.-N. | .1 | Ω a. ☈ ●° ⚡ ⊍$^2$ p. |
| 13 | 58.01 | 28.1 | 34 | 23.8 | 79 | Variable | 1.7 | 9.3 | Ci.-S. | S.-Cu. | 1.3 | Ω a. ☈ ● p. |
| 14 | 57.70 | 28.4 | 34.1 | 24.1 | 79.7 | S quad. | 2.2 | 9.5 | Ci.-S. | Cu. | ------ | Ω a. ☈ ⚡ p. |
| 15 | 57.98 | 28.7 | 32.6 | 24.6 | 77 | N quad. | 2.8 | 9 | Ci.-S. | Cu. | ------ | Ω° a. ⊤ p. ⚡ a. p. |
| 16 | 58.16 | 28 | 33.4 | 25.1 | 80 | S | 2 | 9.8 | Ci.-S. | Cu.-N. | 14.5 | ⚡ Ω° a. ● ☈$^2$ ⌒$^2$ p. |
| 17 | 57.61 | 27.6 | 33.6 | 23.5 | 82.2 | SE quad. | 2.5 | 9.8 | Ci.-S. | Cu.-N. | 22.4 | ●° ☈ a. p. |
| 18 | 57 | 27.6 | 32.1 | 23.5 | 82.3 | SSE, WNW | 2 | 9.5 | Ci.-S. | S.-Cu., Cu. | ------ | ⊤ ☈ p. |
| 19 | 56.95 | 27.9 | 33.4 | 24 | 80.5 | SSE, W | 2.3 | 10 | Ci.-S. | Cu.-N., Cu. | .3 | Ω a. ⊤ p. ◯° a. p. |
| 20 | 57.34 | 27.8 | 33.4 | 23.4 | 78.8 | SE quad. | 1.8 | 8.2 | Ci.-S. | Cu.-N. | 5.6 | d ☈° a. ☈ ● p. |
| 21 | 57.42 | 28.6 | 32.9 | 24.4 | 80.7 | SE quad. | 2 | 8.8 | Ci.-S. | Cu.-N. | 1 | Ω a. ●° ☈ ⚡ p. |
| 22 | 57.40 | 28.7 | 34 | 24.7 | 80 | SE quad. | 2.5 | 9.7 | Ci.-S. | Cu. SSE | 4.1 | ●° ☈ ⌒ ⚡ p. |
| 23 | 56.95 | 29 | 33.9 | 24.6 | 80 | SE quad. | 1.8 | 10 | Ci.-S. | Cu.-N. | ------ | ⊤ p. ⚡ a. p. |
| 24 | 56.45 | 29.1 | 33.1 | 25.4 | 79.8 | S, W | 2.5 | 9.5 | Ci.-S., Ci. | Cu., Cu.-N. | 10.4 | ● d° ☈ ⌒ ⚡ p. |
| 25 | 57.36 | 28.5 | 33.9 | 23.9 | 79.3 | S, W | 2.2 | 9.8 | Ci.-S. | Cu. S | ------ | Ω a. ⚡ p. |
| 26 | 57.86 | 28 | 32.6 | 23.9 | 80.3 | S, W | 2.2 | 10 | Ci.-S. | Cu. S | ------ | Ω a. ⊤ ⚡ p. |
| 27 | 57.94 | 28.8 | 34.1 | 24.4 | 79.7 | SSE | 2.2 | 9.3 | Ci.-S. | Cu. S | ------ | Ω° a. ☈ ⚡ p. |
| 28 | 57.30 | 29.3 | 33.6 | 25.4 | 77.8 | SE quad. | 2 | 10 | Ci.-S. | Fr.-Cu. S | ------ | Ω° a. ⊤ ☈ ⚡ p. |
| 29 | 56.57 | 29.2 | 33.9 | 25.5 | 78.5 | S, W | 2.2 | 10 | Ci.-S. | Fr.-Cu. W | ------ | ☈ a. ⊤ p. ⚡ a. p. |
| 30 | 56.98 | 28.6 | 33.4 | 25.3 | 82.3 | SE quad. | 2.7 | 10 | Ci.-S. | Cu.-N. | 1.8 | Ω° ● a. ☈ ⊤ ⚡ p. |
| 31 | 57.97 | 29 | 33.7 | 25.5 | 80.3 | SE quad. | 2.2 | 9.8 | Ci.-S. | Cu.-N., Cu. | ------ | ☈ ⚡ p. ⊤ a. p. |
| Mean | 757.93 | 28.2 | 33.1 | 24.1 | 80.1 | ------------ | 2.3 | 9 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 142.6 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N ; $\lambda$=120° 36′ E ; barometer above sea, 1,512.5 meters ; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 637.11 | 18.1 | 24.3 | 15.9 | 90.2 | E quad. | 11.2 | 6.9 | Ci. | S.-Cu. NE | 27.9 | Ω a. ☈ ≡$^2$ ●$^2$ ⌒ p. |
| 2 | 36.59 | 18.4 | 24 | 15.4 | 90 | W, WSW | 11.1 | 6.4 | Ci. | Cu.-N. NE | 12.8 | ● ≡$^2$ ⊤ ☈° p. |
| 3 | 36.32 | 18 | 23 | 15.2 | 96.2 | W quad. | 12.2 | 7.6 | ------------ | Cu.-N. NE | ------ | Ω a. ≡$^2$ p. |
| 4 | 37.18 | 19 | 24.6 | 15.4 | 83.5 | E | 13.7 | 6.1 | Ci. | Cu. E | ------ | Ω a. ≡$^2$ ⊤° p. |
| 5 | 38.03 | 18.9 | 24.7 | 16.4 | 85 | E, SE | 16.2 | 7.6 | Ci. | Cu. NNE | ------ | Ω a. ≡$^2$ ⚡ p. |
| 6 | 37.42 | 18.4 | 24.2 | 15.7 | 88.2 | E, NE | 11.2 | 6.6 | Ci. | Cu. ENE | 11.2 | Ω a. ≡$^2$ ☈ ●$^2$ p. |
| 7 | 36.84 | 17.4 | 23.6 | 15.7 | 91.8 | E quad. | 15.6 | 7.9 | A.-Cu. N | Cu. NNE | 24 | ≡$^2$ ⊤ d ● p. |
| 8 | 36.27 | 18.1 | 22.9 | 15.4 | 87.7 | Variable | 13 | 7.3 | Variable. | Cu. SE | 49.5 | ◯ a. ≡ ●$^2$ d p. |
| 9 | 36.86 | 17.4 | 22.6 | 15.4 | 93.5 | E, WSW | 10.3 | 9 | Ci. | Cu. NNW | 58.4 | d ≡$^2$ ●$^2$ p. ⊤ ☈ |
| 10 | 36.97 | 18.4 | 23.6 | 15.5 | 89.8 | W quad. | 10.6 | 7.1 | A.-Cu. NNW, N | Cu. WNW, NW | ------ | d° ≡ p. |
| 11 | 36.90 | 17.3 | 22.7 | 15.5 | 88.5 | Variable | 11.5 | 7.4 | Ci., Ci.-S. | Cu. ENE | 7.1 | Ω a. ⌒$^2$ ☈ ● p. |
| 12 | 36.75 | 17.8 | 23.6 | 15.7 | 85.3 | SE, WSW | 12.2 | 7.3 | A.-Cu. | Cu. N | 31.9 | ● ☈ ⊤$^2$ ≡$^2$ d p. |
| 13 | 36.60 | 18.5 | 23.9 | 16.4 | 90.3 | E, WSW | 9 | 8 | A.-Cu. NW | Cu. NE | 14.3 | ⊤° a. ☈ ●$^2$ ≡$^2$ p. |
| 14 | 36.34 | 18.7 | 24 | 16 | 91.2 | E quad. | 9.8 | 6.9 | Ci. | Cu. S | ------ | Ω a. ☈ d° ≡ ⚡ p. |
| 15 | 36.61 | 18.9 | 23.5 | 15.8 | 91.7 | E quad. | 11.7 | 7.1 | Ci. | Cu.-N. W | 3.5 | Ω a. ≡ ☈ ● ⌒° p. |
| 16 | 36.66 | 18.4 | 24.8 | 15.7 | 91.8 | E quad. | 13.4 | 9.3 | Ci. | Cu. NE, NNE | 1.1 | Ω° ≡ a. ☈° d° ⌒ p. |
| 17 | 35.96 | 18.8 | 24 | 15.8 | 87.3 | E quad. | 11.9 | 6.3 | Ci. | Cu. ESE, E | 2.9 | Ω° a. ☈ ● d° ≡$^2$ p. |
| 18 | 35.55 | 18.4 | 23.3 | 15.8 | 86.7 | SE, E | 10.4 | 9 | A.-Cu. NW | Cu.-N. W | .3 | Ω a. ≡$^2$ ☈ d° p. |
| 19 | 35.70 | 18.6 | 23.8 | 15.8 | 89.7 | E quad. | 12.6 | 8.4 | Ci. | Cu. Variable | ------ | Ω a. ☈ d p. |
| 20 | 35.90 | 19.2 | 24.4 | 15.5 | 83.8 | SE, ESE | 15.7 | 4.6 | Ci. NNE | N. SW | ------ | Ω a. ≡ p. |
| 21 | 36.12 | 18.4 | 24.2 | 16 | 93.7 | Variable | 11.8 | 7.1 | Ci.-S. | N. W | 6 | Ω a. ≡$^2$ ●$^2$ ⊤ p. |
| 22 | 36.01 | 18.6 | 23.6 | 17 | 94.2 | E quad. | 11.9 | 7.4 | Ci.-S. N | N. SE | 5.9 | Ω a ≡$^2$ ● ☈ ⌒ p. |
| 23 | 35.84 | 18.9 | 24.1 | 16.3 | 92.5 | W quad. | 9.9 | 9.6 | A.-Cu. NW | N. S, SW | ------ | Ω ≡$^2$ a. ⊤ p. |
| 24 | 35.43 | 19.6 | 24.5 | 16.8 | 87.5 | WSW, ESE | 13.4 | 6.9 | Ci. | Cu. SE | .6 | Ω a. ≡$^2$ ☈ ●° p. |
| 25 | 36.10 | 19.2 | 25.2 | 16 | 90.2 | WSW | 10 | 6.3 | Ci. SE | Cu. E | ------ | ≡$^2$ a. p. |
| 26 | 36.46 | 18.5 | 24 | 16.2 | 93.8 | W quad. | 11.2 | 7.1 | Ci.-S. WNW | N.-cf. SE, WNW | 40.9 | Ω a. ≡$^2$ ●$^2$ p. |
| 27 | 36.57 | 18.3 | 23.4 | 16.6 | 94.7 | E quad. | 11.6 | 8.7 | A.-Cu. W | N. NW | 20.6 | ≡ a. ●$^2$ ⊤ ☈ ⌒ p. |
| 28 | 36.24 | 19.3 | 24.4 | 16.3 | 89.5 | SE | 9.9 | 7.6 | Ci. SW | Cu.-N. Variable | .3 | ≡ ⊤ p. |
| 29 | 35.67 | 19 | 23.5 | 16.6 | 91.8 | W quad. | 12.5 | 9.4 | Ci.-S. NNW | Cu. SW | 18.8 | Ω a. ●$^2$ p. ≡° a. p. |
| 30 | 35.87 | 18.7 | 24.4 | 16.6 | 93.5 | W quad. | 13 | 7.4 | Ci.-S. NW | S.-Cu. N, WSW | 42.4 | ⊤ ●$^2$ ≡$^2$ p. |
| 31 | 36.83 | 19.5 | 24.1 | 16.1 | 86.7 | E quad. | 11.4 | 8.3 | Ci.-S. NE | Cu. ESE | ------ | ☈ ⊤ ≡ p. |
| Mean | 636.44 | 18.5 | 23.9 | 16 | 90 | ------------ | 11.9 | 7.5 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 380.4 | |

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[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi=17°\ 34'$ N; $\lambda=120°\ 23'$ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.98 | 28 | 32.6 | 23.9 | 74.5 | Variable | 7.8 | 1 | Ci.-S. | Cu. | ------ | Ω a. ⚡° p. |
| 2 | 58.16 | 28.7 | 33.7 | 24.5 | 64.7 | Variable | 10.2 | 0 | Ci.-S. | Cu. | ------ | ⚡° p. |
| 3 | 58.12 | 28.4 | 33.2 | 24.6 | 61.2 | Variable | 8.9 | .2 | Ci.-S., A.-Cu. | Cu. | ------ | |
| 4 | 58.99 | 28.7 | 33.6 | 24 | 68.7 | NW quad. | 6.9 | 1.7 | Ci.-S. | Cu. | ------ | ≡° a. |
| 5 | 59.78 | 29.1 | 33.5 | 25 | 70.5 | NW quad. | 7.6 | 1.5 | Ci.-S. | Cu. | ------ | ⛈ ⌒ ⚡° p. |
| 6 | 59.16 | 28 | 32.7 | 24 | 75.7 | Variable | 8.3 | 5 | Ci.-S. | Cu. WSW | 21.8 | ⛈ ● ⚡ p. |
| 7 | 58.99 | 27 | 32.8 | 23 | 81.8 | S quad. | 9.1 | 7.2 | Ci.-S. | Cu.-N. S | 14.4 | ⛈ d ● p. |
| 8 | 58.20 | 26.5 | 31.3 | 22 | 79.7 | SE quad. | 7.8 | 8.3 | Ci.-S. | Cu.-N. SSW | 7.4 | ● p. |
| 9 | 58.98 | 26.9 | 31.5 | 22.5 | 80.3 | SE quad. | 10.5 | 9 | Ci.-S. | Cu. SSW | 2.3 | ⌒ a. ↙° ⚡ p. ⛈ d |
| 10 | 58.94 | 27.4 | 32.5 | 22.7 | 77.3 | Variable | 7.2 | 3.3 | Ci.-S. | Cu. | ------ | ⊕ ⚡ p. |
| 11 | 58.81 | 27.5 | 32.6 | 23.3 | 77.2 | Variable | 8.2 | 2.2 | Ci.-S. | Cu. | ------ | ⊕ p. |
| 12 | 58.34 | 27.4 | 32.8 | 23.5 | 74.8 | SE quad. | 9.9 | 1.8 | Ci.-S. | Cu. SSW | .5 | Ω a. ⛈ d p. |
| 13 | 58.13 | 27.5 | 32.6 | 23.2 | 75.5 | Variable | 7.2 | .7 | Ci.-S. | Cu. | ------ | ⊕ a. ⛈° ⊍ ⚡ p. |
| 14 | 57.91 | 27.8 | 33.7 | 24.1 | 76.2 | Variable | 6.7 | 2.8 | Ci.-S. | Cu. | ------ | ⛈° ⊕ ⊍ ⚡ p. |
| 15 | 58.20 | 28 | 33.5 | 24 | 73.5 | NE quad. | 9.1 | 1.8 | Ci.-S. | Cu. | ------ | ⌒ ⚡ p. |
| 16 | 58.06 | 28.5 | 33.5 | 24.2 | 68.3 | SE quad. | 10.4 | 2.5 | Ci.-S. | Cu. | ------ | ⛈ ⚡ p. |
| 17 | 57.75 | 28.1 | 32.8 | 23.9 | 68.8 | SE quad. | 8.7 | 2 | Ci.-S. | Cu. | ------ | ⚡ p. |
| 18 | 57.07 | 28.1 | 33.5 | 24 | 71.7 | Variable | 8.3 | 2.7 | Ci.-S. | Cu. | ------ | ⛈ ⚡ p. |
| 19 | 57.07 | 28.3 | 33.5 | 24.1 | 71.5 | SE quad. | 6.6 | 5 | Ci.-S. | Cu. | ------ | |
| 20 | 57.41 | 28.4 | 33.7 | 24.5 | 71 | Variable | 7.3 | 1.7 | A.-Cu. | Cu. NE | ------ | |
| 21 | 57.54 | 29 | 34.5 | 24.5 | 71.2 | SW quad. | 7.6 | 2.2 | Ci.-S. | Cu. | ------ | |
| 22 | 57.38 | 28.8 | 33.9 | 25 | 75.3 | E | 8.2 | 2.3 | Ci.-S. | Cu. | ------ | ⌒ a. ⛈ ⚡ p. |
| 23 | 57.03 | 28.8 | 34.3 | 24.7 | 69.2 | SE quad. | 8.5 | 2.7 | Ci.-S. | Cu. | ------ | ⛈ ⌒ p. |
| 24 | 56.48 | 28.9 | 34.2 | 24.6 | 71.7 | Variable | 8.2 | 2.5 | Ci.-S. | Cu. | ------ | ⛈ ⚡ p. |
| 25 | 57.33 | 28.9 | 34.2 | 25 | 71.2 | SE quad. | 8.2 | 1.2 | Ci.-S. | Cu. | ------ | |
| 26 | 57.76 | 28.8 | 34.2 | 25 | 73.8 | SE quad. | -------- | .7 | Ci.-S. | Cu. | ------ | ⌒ a. ⚡° p. |
| 27 | 57.96 | 29.6 | 34.4 | 24.7 | 69.7 | Variable | 8 | 3.5 | A.-Cu., Ci.-S. | Cu. | ------ | ⚡ p. |
| 28 | 57.36 | 29.4 | 34.5 | 25 | 69.5 | S quad. | 6.9 | 3 | Ci.-S. | Cu. | 2.3 | ⚡° p. |
| 29 | 56.60 | 28.5 | 33 | 24.7 | 80.3 | S quad. | 8.8 | 5.7 | Ci.-S. | Cu.-N. SW | 2.5 | d ● ⛈ a. ⊤ ⚡° p. |
| 30 | 57 | 29.3 | 34.3 | 25.4 | 74.2 | SE quad. | 8.2 | 6 | Ci.-S. | Cu. | ------ | d° p. |
| 31 | 58.01 | 29.2 | 34.8 | 24 | 73.8 | Variable | 9.8 | 2 | Ci.-S. | Cu. | ------ | ⛈ ⌒ d p. |
| Mean | 757.98 | 28.3 | 33.4 | 24.1 | 73 | ------------ | 8.3 | 3 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 51.2 | |

### TUGU EGARAO.

[$\phi=17°\ 36'$ N; $\lambda=121°\ 40'$ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Upper. | Clouds. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 759.43 | 27.8 | 32.8 | 24.9 | 78.2 | N quad. | 0.7 | 5.5 | ------------------ | Cu. E, N | ------ | Ω a. |
| 2 | 59.42 | 26.2 | 32.3 | 21.8 | 77.2 | NW | .7 | 2.2 | ------------------ | Cu. SE, NE | ------ | Ω² a. |
| 3 | 59.16 | 26 | 33.2 | 20.5 | 74.8 | SE, NE | .3 | 2.2 | ------------------ | Cu. SE | ------ | Ω² a. |
| 4 | 59.75 | 27.8 | 34.4 | 21.8 | 68.7 | SE | .3 | 1.8 | ------------------ | Cu. ESE | ------ | Ω² a. |
| 5 | 60.20 | 28.6 | 36 | 23.5 | 71.7 | SE, N | .3 | 2.7 | Ci. | Cu. E | ------ | Ω² a. ⌒ ⛈ p. |
| 6 | 59.58 | 28.3 | 34.8 | 23.9 | 77.3 | SE, NNW | .3 | 5.7 | Ci., Ci.-S. | Cu.-N. NW | ------ | Ω² a. d² ⛈ ⚡ p. |
| 7 | 58.98 | 28.2 | 33.3 | 23.5 | 76.8 | SE | .3 | 7.8 | Ci., Ci.-S. | Cu., Cu.-N. S, NE | ------ | ⚡ Ω a. ⛈ ⚡ p. |
| 8 | 58.50 | 26.6 | 32.9 | 23.3 | 83.7 | SE | .8 | 7.3 | Ci., Ci.-Cu. | Cu., Cu.-N. S, SW | 23.8 | Ω a. ● ⛈ ⚡ p. |
| 9 | 59.26 | 25.7 | 32.3 | 22.9 | 87.5 | SE | 1 | 9 | Ci.-S., Ci.-Cu. | Cu.-N. SE | 1.3 | ⛈ ● ⚡ p. |
| 10 | 59.22 | 26.5 | 32.7 | 22.9 | 82.2 | SE | .3 | 7.7 | Ci.-S., A.-Cu. | Cu.-N. S, SE | 4.1 | ● p. |
| 11 | 59.38 | 27.6 | 33.5 | 23.6 | 78.7 | W quad. | .7 | 7.8 | Variable | Cu.-N. SE, N | 39.8 | ⚡ ●² ⛈ p. |
| 12 | 58.84 | 26.9 | 33.5 | 23.3 | 84.3 | Variable | 1 | 7.2 | A.-Cu. S | Cu.-N. SSW, N | ------ | ● a. d ⛈ p. |
| 13 | 58.33 | 28.1 | 34.3 | 24.4 | 77.8 | S | .7 | 7.2 | Ci.-S. | Cu.-N. SW | ------ | Ω a. ⊤ p. |
| 14 | 58 | 27.6 | 34.3 | 24.5 | 78.8 | S, NW | .7 | 4.8 | ------------------ | Cu.-N. NW | 6.4 | Ω a. d ⛈° ● ⚡ p. |
| 15 | 58.67 | 27.1 | 33.9 | 23.3 | 80.7 | N quad. | .7 | 6.3 | Ci.-S. | Cu.-N. NE | 3 | ⊤ ⛈ ⌒ ● p. |
| 16 | 58.79 | 28.4 | 34.9 | 24.4 | 77 | Variable | .8 | 7.2 | Ci., Ci.-S. | Cu.-N. N, NW | ------ | ⊤ ⚡ ⌒ p. |
| 17 | 57.77 | 28.5 | 34.2 | 24 | 78.5 | SE | 1 | 6.7 | Ci. | Cu., Cu.-N. S, NW | 4.6 | Ω a. ⊤ ⚡ p. |
| 18 | 57.37 | 27.9 | 32.5 | 25 | 78.7 | E quad. | 1.3 | 8.2 | A.-Cu. SE | Cu.-N. SW, NE | 10.2 | ⛈° ↙° ⌒ ⚡ p. ● |
| 19 | 57.36 | 28.2 | 33.7 | 24.5 | 81.2 | SE quad. | 1.3 | 6.8 | Ci.-S. | Cu.-N. SE | ------ | ● a. ⛈ ⚡ p. |
| 20 | 57.55 | 28.9 | 35.5 | 24.3 | 73.8 | SE, NE | 1 | 2.8 | Ci.-S. | Cu. S | ------ | Ω² a. |
| 21 | 57.53 | 28.4 | 34.9 | 24.9 | 75 | NW | .8 | 6.5 | Ci., Ci.-S. | Cu.-N. N | ------ | Ω² a. ⛈ ⚡ p. |
| 22 | 57.65 | 27.8 | 35.5 | 24.3 | 77.3 | Variable | 1.7 | 7 | Ci. | Cu., Cu.-N. SE, N | 35.3 | Ω a. ⛈² ↙° ●² p. |
| 23 | 57.42 | 27.5 | 32.7 | 23.5 | 84 | SE, NW | 1 | 6.3 | A.-Cu. S | Cu., Cu.-N. S, NW | ------ | ● a ⛈ ⚡ p. |
| 24 | 56.71 | 28.2 | 34.8 | 24.8 | 81.7 | Variable | .8 | 7.3 | Ci. | Cu., Cu.-N. S, N | ------ | d a. ⛈° d p. |
| 25 | 57.49 | 28.5 | 34.7 | 23 | 75.8 | S quad. | 1.3 | 6.3 | Ci.-S. | Cu., Cu.-N. S, N | 3 | Ω a. ⊤ ●° ⛈ p. |
| 26 | 57.68 | 29.1 | 35.5 | 25.2 | 76.7 | NW | 1.2 | 5.3 | Ci. | Cu.-N S, N | 7.1 | ⚡ ⛈ ● p. |
| 27 | 58.44 | 28 | 35 | 24.7 | 79.7 | SE quad. | 1.2 | 7.8 | Ci.-S. | Cu.-N. S, NW | 19 | ⛈ ●² p. |
| 28 | 57.45 | 28.6 | 34.2 | 24.3 | 79.3 | S quad. | 1.3 | 6.7 | Ci. | Cu.-N. SE, N | ------ | ⛈ ⌒ ⚡ p. |
| 29 | 56.33 | 28.5 | 35.2 | 25.2 | 81.3 | SE | .7 | 6.5 | Ci. | Cu. SE | ------ | Ω a. ⛈° ⚡ p. |
| 30 | 57.31 | 27.6 | 35.9 | 23.8 | 85.8 | Variable | 1 | 8.3 | Ci.-S. | Cu.-N. NE | ------ | Ω a. ⛈° d² p. |
| 31 | 58.92 | 28.1 | 35 | 22.5 | 80.7 | SE | .5 | 5.5 | Ci., Ci.-S. | Cu. SE | ------ | Ω a. ⚡ p. |
| Mean | 758.34 | 27.8 | 34.1 | 23.8 | 78.9 | ------------ | .8 | 6.1 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 157.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, −1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 760 | 26.2 | 30.6 | 22.2 | 80.3 | E quad. | 12.9 | 0.2 | ------ | Cu. E | ------ | ϟ p. |
| 2 | 60.02 | 25.9 | 30.3 | 21.5 | 76.8 | E | 14.9 | 0 | ------ | ------ | ------ | Ω a. |
| 3 | 59.57 | 25.5 | 30.5 | 21.2 | 76.3 | E | 14.3 | .2 | ------ | Cu. | ------ | Ω ≡° a. |
| 4 | 59.88 | 26.6 | 31.8 | 22.1 | 75.2 | E | 12.4 | 0 | ------ | ------ | ------ | Ω ≡° ∞ a. |
| 5 | 60.32 | 27.2 | 32.6 | 22.1 | 80.7 | E | 11.6 | 1 | A.-Cu. | Cu. S | ------ | Ω ≡° a. |
| 6 | 59.65 | 27.3 | 32 | 24.1 | 81.7 | E | 13.5 | 3.2 | Ci.-S. W | S.-Cu. E | ------ | ϟ p. |
| 7 | 59.04 | 26.9 | 32 | 23.6 | 83.2 | E, NE | 10.3 | 5.5 | Ci.-S. W | S.-Cu., Cu.-N. SW, S | 0.8 | Ω a. ϟ p. |
| 8 | 58.51 | 25.4 | 32.6 | 22.1 | 86.2 | E quad. | 13.7 | 6 | Ci.-S., A.-Cu. W, S | N. N | 40.9 | ●° ⌈ϟ a. ⊤ ●$^2$ p. |
| 9 | 59.31 | 25.1 | 31.9 | 22.4 | 86.7 | Variable | 14.7 | 8 | ------ | S.-Cu., Cu.-N. SW, N | 28.7 | ⊤ ● p. |
| 10 | 59.30 | 25.5 | 31.2 | 22 | 85.2 | S | 13.1 | 8.3 | Ci.-S., A.-Cu. W | S.-Cu. W | 6.4 | ● a. ⌈ϟ ●° p. |
| 11 | 59.35 | 26.8 | 32.5 | 23.1 | 82.5 | S | 11.9 | 5.2 | Ci.-S., A.-Cu. W | S.-Cu. W | ------ | ⊤ ϟ p. |
| 12 | 58.86 | 27.2 | 33 | 23.2 | 80.2 | SE, NE | 15.6 | 1.5 | ------ | Cu.-N. W | ------ | ϟ p. |
| 13 | 58.26 | 27.3 | 33.2 | 24 | 79.8 | E quad. | 13.3 | .7 | A.-Cu. W | Cu. S | ------ | Ω a. ⊤ ϟ p. |
| 14 | 58.05 | 26.8 | 33.7 | 23.6 | 81.5 | S quad. | 11.4 | 3.5 | Ci.-S. W | Cu.-N. S | ------ | ⊤° ⌈ϟ ⌒ p. |
| 15 | 58.65 | 26.9 | 32.6 | 22.6 | 82.2 | Variable | 11.4 | 3.2 | Ci.-S. W | Cu.-N. N | 15.2 | ⌈ϟ ● p. |
| 16 | 58.69 | 26.8 | 31.5 | 23.5 | 83.7 | SE quad. | 12.2 | 5.3 | Ci.-S., Ci. N | Cu. SE | ------ | ϟ p. |
| 17 | 57.90 | 27.3 | 33.7 | 23.5 | 78.7 | SE | 13.3 | 3.2 | Ci.-S. W | Cu.-N., S.-Cu. | ------ | ϟ p. |
| 18 | 57.23 | 27 | 33.2 | 24.2 | 82.8 | SW quad. | 11.4 | 6.5 | Ci.-S. NW | S.-Cu. | ------ | ⊤ ϟ p. |
| 19 | 57.37 | 26.6 | 33.2 | 23.7 | 83.8 | SW quad. | 15 | 3.2 | Ci.-S. NW, W | S.-Cu. | ------ | ⊤ ⌒ p. |
| 20 | 57.40 | 27.7 | 32.6 | 24 | 80.3 | SE quad. | 13.9 | .2 | Ci. | S.-Cu. | ------ | |
| 21 | 57.64 | 28 | 33 | 24.1 | 77.7 | E quad. | 9.4 | 4.3 | Ci., Ci.-S. NE, W | S.-Cu. | ------ | ⊤ ⌈ϟ p. |
| 22 | 57.39 | 27.8 | 34 | 24.5 | 80.5 | E, SE | 13.8 | 4.7 | Ci.-S. N, W | S.-Cu. NW | ------ | ϟ a. ⊤ ⌈ϟ p. |
| 23 | 57.16 | 27.8 | 34 | 23.6 | 78 | SW quad. | 13.1 | 5.8 | Ci., Ci.-S. N, NE | S.-Cu., Cu.-N. | ------ | ϟ a. ⊤ ϟ p. |
| 24 | 56.64 | 27.1 | 33.8 | 23.5 | 82.8 | SW, S | 12.1 | 3.5 | ------ | Variable | 2.5 | ⌈ϟ ● ϟ p. |
| 25 | 57.47 | 26.8 | 34 | 22.6 | 81.3 | SW | 12.1 | 3.8 | Ci., Ci.-S. N, W | S.-Cu. | ------ | ⊤ ϟ p. |
| 26 | 57.94 | 28 | 34.6 | 24 | 79.8 | Variable | 11.8 | 3.8 | A.-Cu. SW | S.-Cu. | 42.9 | ⊤ ⌈ϟ ●$^2$ p. |
| 27 | 58.25 | 27.8 | 33.4 | 24 | 83.5 | Variable | 13.7 | 4.7 | Ci. S | Cu. S | ------ | ⊤ ϟ p. |
| 28 | 57.43 | 28 | 33.7 | 24.1 | 81.2 | S quad. | 13.8 | 3.8 | Ci., Ci.-S. W, SW | Cu. SE | ------ | ⌈ϟ ⌒ ϟ p. |
| 29 | 56.06 | 27.9 | 34.5 | 24.4 | 82.5 | SE | 12.3 | 6.3 | A.-Cu., Ci. W, E | Cu.-N., S.-Cu. W, SW | ------ | ⌈ϟ ϟ p. |
| 30 | 57.21 | 27.8 | 33.5 | 24.1 | 82 | S quad. | 13.7 | 5.2 | Ci.-S. E | S.-Cu. W | ------ | ϟ a. p. ⊤ p. |
| 31 | 58.66 | 27.6 | 33.2 | 23.8 | 80.7 | SE quad. | 13.2 | 1.8 | Ci.-S. E | Cu. | ------ | ϟ a. p. ⊤ p. |
| **Mean** | 758.36 | 27 | 32.8 | 23.3 | 81.2 | ------ | 12.9 | 3.6 | ------ | ------ | ------ | |
| **Total** | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 137.4 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[φ=6° 03′ N; λ=121° 00′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.6 | 21.3 | 96 | 74 | 1 | 3 | ------ | Ω° ≡° a. |
| 2 | 33 | 21.9 | 94 | 76 | 2 | 9 | 1 | ⊤ a. ● p. |
| 3 | 33.5 | 21.4 | 94 | 81 | 5 | 9 | .4 | ●° ⌒² a. ☈ ● p |
| 4 | 32.4 | 21.5 | 96 | 84 | 1 | 8 | 5.9 | d² ● a. ● d ☇ p. |
| 5 | 32.4 | 21 | 96 | 77 | 3 | 7 | ------ | Ω ≡° a. ⊤² d° p. |
| 6 | 32.2 | 21.9 | 98 | 76 | 5 | 7 | .5 | ☈ ●° a. p. ⊍° p. |
| 7 | 32.4 | 21.5 | 96 | 73 | 8 | 5 | 1.6 | Ω° a. ●° d ☈ p. |
| 8 | 33.5 | 21.2 | 96 | 71 | 2 | 7 | ------ | Ω² ≡° a. d° p. |
| 9 | 32.5 | 21.9 | 97 | 82 | 3 | 7 | 5.2 | ⊤° a. ☈ ● ⊍° p. |
| 10 | 32.7 | 22 | 97 | 91 | 4 | 10 | 28.9 | Ω² ≡ ⊤° a. ☈ p. |
| 11 | 33 | 21.3 | 97 | 90 | 9 | 7 | 4.9 | ◯ a. p. ● ⊤° d² p |
| 12 | 33.1 | 20.6 | 97 | 70 | 0 | 4 | ------ | Ω a. |
| 13 | 31 | 21.5 | 91 | 92 | 8 | 10 | 14.8 | d² a. ● a. p. ⊤° p |
| 14 | 31.4 | 21.3 | 96 | 85 | 7 | 9 | .3 | Ω a. d² ●° p. |
| 15 | 32.7 | 22.1 | 96 | 86 | 6 | 5 | .1 | ≡° a. d² ⊤° p. |
| 16 | 32.1 | 21.2 | 93 | 78 | 2 | 6 | .2 | ●° ⊤° a. p. d° ☇ p. |
| 17 | 33 | 21.4 | 97 | 73 | 5 | 8 | ------ | Ω° a. |
| 18 | 33.1 | 22.4 | 96 | 74 | 8 | 9 | 24.4 | ⊤ a. d² ☈ ● p. |
| 19 | 32 | 21.4 | 97 | 73 | 9 | 6 | ------ | Ω ≡ a. ☇° p. |
| 20 | 31.2 | 22.4 | 96 | 91 | 4 | 10 | 11.4 | d° ● a. p. ⊤ ☇ p. |
| 21 | 32.1 | 22.3 | 97 | 90 | 7 | 8 | 12.2 | ☈ ●° a. p. ☇° p. |
| 22 | 33.6 | 22.1 | 97 | 74 | 5 | 6 | 2.5 | ⊤° a. p. ☈ d p. |
| 23 | 32.6 | 23.2 | 97 | 83 | 10 | 8 | .3 | ☈ a. p. d ☇° p. |
| 24 | 32.1 | 22.1 | 94 | 72 | 9 | 9 | ------ | Ω d a. ◯ ☇° p. |
| 25 | 32 | 22.5 | 96 | 78 | 6 | 10 | 7.6 | ● a. d² a. p. |
| 26 | 33.2 | 21.9 | 97 | 70 | 8 | 9 | ------ | Ω ≡ a. ⊤° ☇ p. |
| 27 | 32.7 | 23 | 97 | 82 | 4 | 9 | .8 | d ●° a. ⊤° ☇ ● p. |
| 28 | 33.4 | 22 | 97 | 75 | 5 | 8 | ------ | Ω a. d p. |
| 29 | 34 | 22.3 | 97 | 68 | 8 | 7 | ------ | Ω d² a. ⊤ ☇° p. |
| 30 | 34.5 | 22 | 96 | 69 | 8 | 8 | ------ | ☇ p. |
| 31 | 32.9 | 22.7 | 93 | 76 | 8 | 8 | ------ | ◯° ⊤° p. |
| Mean | 32.7 | 21.8 | 95.9 | 78.5 | 5.5 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 123 | |

### ISABELA, BASILAN.

[φ=6° 42′ N; λ=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.5 | 22.6 | 97 | 75 | 8 | 8 | 1 | Ω a. ⊤ p. |
| 2 | 29.8 | 23 | 97 | 81 | 10 | 10 | 3.6 | p a. ●° p. |
| 3 | 27.8 | 22 | 96 | 77 | 9 | 10 | ------ | Ω a. ⊤ p. |
| 4 | 29.8 | 20.5 | 95 | 87 | 10 | 10 | 21.8 | Ω² a. ● ⊤ p. |
| 5 | 31.3 | 21.5 | 96 | 89 | 10 | 10 | 7.6 | d ● a. p p. |
| 6 | 30.8 | 20.4 | 97 | 68 | 10 | 10 | ------ | Ω a. d ⊤ ☇ p. |
| 7 | 31.8 | 22.5 | 92 | 67 | 9 | 10 | 8.1 | Ω a. ● p° p. |
| 8 | 31.8 | 21.5 | 97 | 78 | 9 | 10 | ------ | Ω a. ⊤ ☇ p. |
| 9 | 30.9 | 22.4 | 96 | 75 | 10 | 10 | ------ | Ω a. ⊤ ⊍ p. |
| 10 | 30.5 | 21.5 | 94 | 78 | 4 | 10 | 5.6 | Ω a. ● p. |
| 11 | 30.3 | 23 | 96 | 74 | 10 | 9 | ------ | Ω a. ⊤ p. |
| 12 | 30.5 | 21.5 | 96 | 75 | 1 | 6 | ------ | Ω a. |
| 13 | 29.3 | 23.4 | 97 | 84 | 10 | 10 | 24.9 | ⊤ d a. ● p. |
| 14 | 29.8 | 21.2 | 98 | 96 | 1 | 10 | 52.5 | Ω² a. ●² p. |
| 15 | 30.9 | 21.8 | 95 | 88 | 2 | 10 | 1.3 | Ω a. ⊤ ☇ ●° p. |
| 16 | 31.8 | 21.4 | 98 | 81 | 2 | 10 | 3.3 | Ω a. ⊤ ☇ p p. |
| 17 | 29.3 | 22 | 97 | 88 | 10 | 10 | 15.2 | Ω a. ⊤ ☇ ● a. p. |
| 18 | 29.8 | 22 | 99 | 77 | 1 | 10 | ------ | Ω a. |
| 19 | 30.7 | 21.8 | 95 | 82 | 1 | 10 | ------ | Ω a. |
| 20 | 28.9 | 21.5 | 98 | 90 | 1 | 10 | 50.8 | Ω a. ⊤ ☇ ●² p. |
| 21 | 32.8 | 22.5 | 97 | 78 | 10 | 9 | 8.6 | Ω a. ● p. |
| 22 | 32.8 | 22 | 95 | 78 | 0 | 10 | 4.6 | Ω a. ● ⊤ p. |
| 23 | 31.9 | 23 | 96 | 83 | 10 | 10 | 5.3? | Ω a. ● ⊤ ☇ p. |
| 24 | 26.8 | 22.2 | 95 | 87 | 10 | 10 | 2 | Ω a. p p. |
| 25 | 29.8 | 22 | 97 | 89 | 10 | 10 | 2.3 | d ●° a. |
| 26 | 29.7 | 22.2 | 97 | 81 | 10 | 10 | 3.8 | Ω ⊤ p a. |
| 27 | 30.8 | 23.2 | 97 | 78 | 1 | 7 | 1.5 | Ω p ⊤ a. |
| 28 | 30.8 | 21.3 | 96 | 69 | 8 | 10 | 1 | Ω ●° a. |
| 29 | 29.8 | 22.5 | 98 | 78 | 0 | 10 | ------ | Ω a. |
| 30 | 31.8 | 22.2 | 98 | 80 | 10 | 10 | ------ | Ω ⌒ a. ⊤ p. |
| 31 | 29.8 | 23 | 97 | 81 | 10 | 10 | ------ | Ω ⊤ a. |
| Mean | 30.4 | 22 | 96.4 | 80.4 | 6.7 | 9.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 224.8? | |

### ZAMBOANGA.

[φ=6° 54′ N; λ=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.9 | 22.8 | 87 | 78 | 8 | 9 | 1.3 | ● ☈ p. |
| 2 | 28.8 | 22.6 | 87 | 99 | 8 | 10 | 6.3 | ●° a. p. |
| 3 | 28.8 | 22 | 93 | 80 | 8 | 9 | ------ | |
| 4 | 30.1 | 22.6 | 85 | 82 | 2 | 9 | ------ | |
| 5 | 32 | 22.6 | 88 | 69 | 9 | 2 | ------ | |
| 6 | 30 | 23 | 87 | 77 | 8 | 6 | ------ | ☇ p. |
| 7 | 31.6 | 22.9 | 90 | 73 | 9 | 5 | ------ | |
| 8 | 31 | 22.5 | 89 | 68 | 3 | 2 | ------ | |
| 9 | 31 | 23.3 | 86 | 55 | 10 | 9 | ------ | ⊤ a. |
| 10 | 31 | 22.5 | 84 | 66 | 9 | 3 | ------ | |
| 11 | 30 | 23 | 85 | 75 | 10 | 9 | ------ | d a. |
| 12 | 30.5 | 22.9 | 86 | 78 | 6 | 3 | ------ | ☈ p. |
| 13 | 28 | 24 | 92 | 76 | 10 | 10 | 2 | ⊤ p a. |
| 14 | 29.5 | 22.5 | 86 | 74 | 4 | 9 | ------ | |
| 15 | 31 | 23 | 86 | 78 | 6 | 7 | ------ | ☈ p. |
| 16 | 30 | 23 | 89 | 79 | 6 | 9 | ------ | |
| 17 | 29 | 22.5 | 89 | 83 | 3 | 10 | ------ | ☈ a. d p. |
| 18 | 30 | 22 | 87 | 73 | 8 | 9 | 20.3 | ☈ ● p. |
| 19 | 29.3 | 22.9 | 91 | 81 | 7 | 9 | ------ | ☈ p. |
| 20 | 30.2 | 22.5 | 88 | 73 | 6 | 9 | 15.2 | ☈ a. ● p. |
| 21 | 31.4 | 22.4 | 87 | 75 | 9 | 3 | ------ | |
| 22 | 31.1 | 23.5 | 85 | 76 | 3 | 9 | ------ | ☈ p. |
| 23 | 31.1 | 23.8 | 85 | 74 | 9 | 3 | ------ | |
| 24 | 27.8 | 23.2 | 87 | 85 | 10 | 9 | 14 | ⊤ ●° a. |
| 25 | 29.3 | 23.5 | 95 | 73 | 10 | 9 | 4.1 | ●° a. |
| 26 | 29.2 | 23 | 90 | 83 | 10 | 9 | ------ | ⌒ a. d a. p. |
| 27 | 30.4 | 23 | 91 | 83 | 3 | 7 | ------ | |
| 28 | 31 | 23.6 | 90 | 80 | 6 | 9 | ------ | |
| 29 | 29.6 | 23.4 | 89 | 82 | 10 | 9 | 4.8 | ● p. |
| 30 | 29.1 | 22.6 | 88 | 86 | 10 | 10 | ------ | d ☇ p. |
| 31 | 28.8 | 23.3 | 89 | 82 | 10 | 9 | 3 | ● a. ⊤ a. p. |
| Mean | 30 | 22.9 | 88.1 | 77.3 | 7.4 | 7.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 71 | |

### DAVAO.

[φ=7° 01′ N; λ=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.2 | 21.1 | 97 | 76 | 5 | 9 | ------ | ⊤ p. |
| 2 | 31.1 | 21.5 | 96 | 82 | 6 | 8 | 21.1 | ● p. |
| 3 | 30.7 | 20.3 | 98 | 76 | 7 | 6 | ------ | ⊤ p. |
| 4 | 30.9 | 21 | 97 | 69 | 5 | 6 | ------ | ⊤ p. |
| 5 | 32.5 | 21.9 | 96 | 63 | 5 | 7 | ------ | |
| 6 | 32.2 | 21.7 | 93 | 71 | 6 | 5 | ------ | ☈ p. |
| 7 | 31.7 | 21.8 | 98 | 74 | 5 | 6 | ------ | |
| 8 | 32.2 | 21.6 | 91 | 68 | 5 | 7 | ------ | |
| 9 | 31.9 | 21.5 | 97 | 68 | 7 | 5 | ------ | |
| 10 | 32.4 | 23 | 95 | 63 | 6 | 6 | ------ | |
| 11 | 31.2 | 22 | 96 | 71 | 5 | 6 | ------ | |
| 12 | 32.9 | 21.6 | 95 | 64 | 5 | 6 | 24.9 | ●² p. |
| 13 | 32.2 | 22.1 | 98 | 70 | 5 | 6 | ------ | |
| 14 | 32.3 | 22.1 | 94 | 68 | 5 | 5 | 27.2 | ●² ☈ p. |
| 15 | 30.2 | 22.4 | 97 | 73 | 6 | 7 | ------ | |
| 16 | 32 | 22.7 | 97 | 68 | 5 | 7 | 26.9 | ☈ ●² p. |
| 17 | 30.6 | 21 | 97 | 80 | 5 | 8 | 13.5 | ● ⊤ p. |
| 18 | 31 | 21.5 | 97 | 72 | 6 | 5 | 27.7 | ●² ☈ p. |
| 19 | 30.7 | 22.1 | 97 | 74 | 6 | 7 | 14 | ● ⊤ p. |
| 20 | 30.2 | 23.1 | 92 | 73 | 5 | 6 | 6.6 | ⊤ d a. ●° ⊤ p. |
| 21 | 31.8 | 22.7 | 96 | 66 | 5 | 5 | 18.8 | ● p. |
| 22 | 30.7 | 22.6 | 96 | 72 | 6 | 8 | ------ | |
| 23 | 31.7 | 22.5 | 96 | 68 | 5 | 8 | ------ | |
| 24 | 31.6 | 22.1 | 96 | 70 | 5 | 5 | ------ | |
| 25 | 30.3 | 22 | 96 | 76 | 7 | 8 | ------ | |
| 26 | 31.4 | 22.6 | 97 | 70 | 5 | 6 | ------ | |
| 27 | 31.7 | 22.4 | 96 | 71 | 6 | 7 | 33.5 | ●² p. |
| 28 | 31 | 22.5 | 97 | 65 | 5 | 7 | ------ | |
| 29 | 31.3 | 22.9 | 97 | 72 | 5 | 6 | 26.2 | ●² ☈ p. |
| 30 | 30.7 | 22.8 | 97 | 73 | 5 | 7 | 11.9 | ●° p. |
| 31 | 31.7 | 22.6 | 98 | 73 | 6 | 5 | ------ | |
| Mean | 31.4 | 22.1 | 96.1 | 70.9 | 5.5 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 252.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### COTABATO.

[$\phi$=7° 13′ N; $\lambda$=124° 15′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.4 | 22.8 | 95 | 67 | 5 | 6 | 1.8 | Ω² a. ◯ ☈² d² p. |
| 2 | 31.2 | 23 | 95 | 68 | 9 | 6 | 13.7 | Ω² a. d² ↯ p. |
| 3 | 30.3 | 22.6 | 95 | 78 | 10 | 9 | 1.8 | Ω² ≡° d a. ☈ p. |
| 4 | 32.7 | 22.8 | 96 | 65 | 3 | 8 | ------ | Ω² d° ⊤ a. ↯ p. |
| 5 | 32.6 | 22.2 | 94 | 58 | 4 | 3 | ------ | Ω² a. ☈ p. |
| 6 | 32.6 | 22.2 | 95 | 77 | 5 | 9 | 29 | Ω² ⊤ a. ☈² ● p. |
| 7 | 31.8 | 20.5 | 99 | 67 | 5 | 7 | ------ | Ω² ≡° a. ↯ p. |
| 8 | 32.6 | 23.1 | 93 | 64 | 3 | 7 | 4.6 | Ω² a. ↯ p. |
| 9 | 31.2 | 23.5 | 96 | 77 | 10 | 9 | ------ | ●° a. ☈ p. |
| 10 | 32.[illegible] | 24.4 | 95 | 73 | 5 | 8 | 1 | Ω° ≡° a. ☈² ●° p. |
| 11 | 31.8 | 23 | 95 | 68 | 7 | 7 | 2.5 | Ω² a. d ☈ ●° p. |
| 12 | 32.1 | 22 | 95 | 62 | 3 | 4 | 3 | Ω² a. ☈ d p. |
| 13 | 31.5 | 22.2 | 96 | 68 | 10 | 4 | 9.7 | Ω² a. d ↯ p. |
| 14 | 32 | 22.5 | 95 | 68 | 3 | 6 | 3.6 | Ω ≡° a. ☈ d° p. |
| 15 | 32.3 | 22.9 | 96 | 63 | 6 | 6 | ------ | Ω² a. ↯ p. |
| 16 | 32.7 | 23.5 | 93 | 70 | 4 | 7 | ------ | Ω² a. ◯² ☈ p. |
| 17 | 32.6 | 22.7 | 92 | 72 | 6 | 9 | 10.2 | Ω² a. ☈ ● p. |
| 18 | 32.7 | 22.5 | 96 | 66 | 8 | 8 | 52.1 | Ω² a. ⌒° ☈ ●² p. |
| 19 | 31.7 | 22.5 | 96 | 68 | 8 | 7 | .5 | Ω a. ☈ d² ⌒ p. |
| 20 | 32.6 | 23.3 | 93 | 63 | 3 | 4 | 2.8 | Ω² a. ◯° ● ☈ p. |
| 21 | 32.8 | 23.2 | 95 | 61 | 6 | 4 | ------ | Ω² a. ☈ ↯ p. |
| 22 | 33.6 | 23.6 | 95 | 58 | 3 | 4 | 11.7 | Ω² a. ☈ ● p. |
| 23 | 33.5 | 23 | 96 | 63 | 10 | 4 | 10.2 | Ω² ≡° a. ☈ ●° p. |
| 24 | 33 | 24 | 95 | 69 | 10 | 7 | 6.4 | Ω² ≡° a. ☈ ●° p. |
| 25 | 32.9 | 24.4 | 97 | 75 | 10 | 10 | 45.7 | Ω² ≡° a. ☈ ●² p. |
| 26 | 31.7 | 22.4 | 97 | 64 | 7 | 5 | 13 | Ω² a. ☈ ● p. |
| 27 | 31.9 | 23.6 | 97 | 64 | 3 | 4 | ------ | Ω² a. ◯² a. p. |
| 28 | 31.7 | 24.5 | 94 | 75 | 7 | 9 | 1.5 | Ω² a. ∞ ☈ d p. |
| 29 | 32.5 | 24.6 | 94 | 71 | 10 | 8 | 46.2 | d ◯² a. ☈ ●² p. |
| 30 | 32.1 | 23 | 96 | 67 | 10 | 6 | 57.1 | Ω a. ◯ ☈ ●² p. |
| 31 | 31.7 | 22.2 | 94 | 71 | 10 | 7 | 8.1 | Ω ◯² a. ☈ ●° p. |
| Mean | 32.2 | 23 | 95.2 | 67.7 | 6.5 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 336.2 | |

### DAPITAN.

[$\phi$=8° 40′ N; $\lambda$=123° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.7 | 23.5 | 90 | 72 | 10 | 7 | ------ | ⊤ a. |
| 2 | 31.9 | 22.7 | 93 | 71 | 7 | 5 | 2 | Ω ⌒ a. ● ☈ p. |
| 3 | 30.9 | 21.9 | 90 | 74 | 8 | 9 | ------ | ◯ ⊕ ⊤ p. |
| 4 | 30.7 | 21.7 | 90 | 73 | 7 | 9 | 1 | ⊤ a. ● p. |
| 5 | 31.2 | 21.5 | 89 | 70 | 8 | 6 | ------ | |
| 6 | 31.3 | 22.4 | 91 | 70 | 7 | 5 | 1.3 | ⌒ ● a. ⊤ ↯ p. |
| 7 | 31.3 | 22.4 | 92 | 70 | 7 | 8 | ------ | Ω a. ⊤ ↯ p. |
| 8 | 31.6 | 22.1 | 92 | 71 | 9 | 6 | 36.1 | Ω a. ⊤ ↯ p. |
| 9 | 31.7 | 22.7 | 91 | 69 | 10 | 8 | ------ | ● a. ↯ p. |
| 10 | 32.5 | 22.2 | 89 | 69 | 7 | 5 | 30.2 | Ω a. ↯ ϖ p. |
| 11 | 32.3 | 22.8 | 89 | 67 | 8 | 7 | 48 | ● a. ϖ ω ↯ p. |
| 12 | 31.6 | 22.7 | 91 | 70 | 10 | 6 | ------ | ● ☈ a. ↯ p. |
| 13 | 31.3 | 22.8 | 92 | 71 | 10 | 7 | 1.8 | ⊤ a. ◯ ● p. |
| 14 | 30.8 | 22.4 | 91 | 72 | 8 | 9 | 3.3 | ● ↯ p. |
| 15 | 31.5 | 22.3 | 91 | 71 | 7 | 5 | ------ | ↯ p. |
| 16 | 31.4 | 22.7 | 90 | 72 | 5 | 9 | 3.6 | ⊤ a. p. ◯ ↯ p. |
| 17 | 31.2 | 22.9 | 90 | 73 | 10 | 10 | ------ | ⊤ ● a. ◯ ⊤° ↯ p. |
| 18 | 30.6 | 22.5 | 91 | 74 | 9 | 7 | ------ | ⊤° a. p. ◯ ↯ ⌒ p. |
| 19 | 31.3 | 22.1 | 93 | 73 | 8 | 5 | ------ | Ω a. ⊤° ↯ p. |
| 20 | 31 | 22.6 | 91 | 75 | 5 | 10 | 7.4 | Ω a. ● ⊤ ↯ p. |
| 21 | 31.1 | 22.1 | 93 | 74 | 8 | 6 | ------ | |
| 22 | 32.3 | 23.1 | 91 | 66 | 8 | 7 | ------ | ☈ a. ⊤ ↯ p. |
| 23 | 31.1 | 22.5 | 94 | 73 | 10 | 6 | 4.3 | ● ⊤ a. ↯ p. |
| 24 | 31.3 | 22.3 | 94 | 70 | 4 | 10 | ------ | Ω a. ⊤ ↯ p. |
| 25 | 30.6 | 22.7 | 91 | 76 | 10 | 9 | ------ | ⊤ a. p. ◯ ↯ p. |
| 26 | 30.3 | 23.2 | 92 | 77 | 10 | 10 | ------ | Ω a. ◯ ⊤ ↯ p. |
| 27 | 31.5 | 22.6 | 91 | 70 | 5 | 6 | ------ | Ω a. ↯ p. |
| 28 | 31.3 | 22.4 | 91 | 70 | 10 | 7 | ------ | Ω a. ↯ p. |
| 29 | 31.4 | 22.8 | 91 | 70 | 6 | 5 | ------ | Ω a. ↯ ●° p. |
| 30 | 30.5 | 22.2 | 91 | 76 | 10 | 7 | ------ | ↯ p. |
| 31 | 30.2 | 22 | 89 | 76 | 9 | 8 | .5 | ●° a. ⊤° p. |
| Mean | 31.3 | 22.5 | 91.1 | 71.8 | 8.1 | 7.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 139.5 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.1 | 24 | 92 | 84 | 8 | 9 | 9.7 | ☈ ● a. ⊤ p. |
| 2 | 30.9 | 23.4 | 91 | 65 | 10 | 7 | 6.6 | Ω ⊤ a. ☈ ● p. |
| 3 | 32.3 | 22.8 | 91 | 71 | 5 | 10 | ------ | Ω² a. ⊤ ↯² p. |
| 4 | 33.1 | 23.1 | 93 | 60 | 10 | 7 | 7.9 | Ω a. ☈ ● p. |
| 5 | 31.6 | 23.1 | 95 | 64 | 5 | 7 | ------ | Ω a. ●° ☈² p. |
| 6 | 32.1 | 23.7 | 92 | 81 | 1 | 9 | .5 | Ω a. ☈ ●° p. |
| 7 | 30.6 | 23.3 | 91 | 63 | 8 | 6 | .8 | ⊤ a. p. ⌒ ● p. |
| 8 | 33 | 22.9 | 91 | 61 | 2 | 6 | .3 | Ω a. ◯ ☈ ω ●° p. |
| 9 | 33 | 23.3 | 95 | 86 | 5 | 9 | .5 | Ω ☈ a. ●° ↯² p. |
| 10 | 32.8 | 23.2 | 96 | 54 | 1 | 7 | ------ | Ω a. ☈ p. |
| 11 | 32.1 | 22.9 | 91 | 71 | 2 | 8 | 47.2 | Ω a. ☈² ●² p. |
| 12 | 31.6 | 22.8 | 96 | 83 | 2 | 9 | 4.5 | Ω ◯ a. ☈ ●° p. |
| 13 | 31.3 | 23.4 | 92 | 77 | 9 | 9 | ------ | Ω a. ☈ p. |
| 14 | 32.6 | 23.6 | 94 | 68 | 6 | 8 | 23.6 | Ω a. ⊤ ◯ ↯² ●² p. |
| 15 | 33 | 22.4 | 94 | 67 | 8 | 8 | 10.9 | Ω ⊕ a. ⊤ ● p. |
| 16 | 32 | 23.5 | 92 | 73 | 2 | 9 | ------ | Ω² a. ⊤ p. |
| 17 | 32.2 | 23.6 | 92 | 80 | 6 | 9 | ------ | Ω ☈ a. ⊤ d° p. |
| 18 | 33.3 | 23.3 | 91 | 68 | 8 | 9 | 6.1 | ⊤ a. p. ● ↯ p. |
| 19 | 33.6 | 22.9 | 93 | 65 | 7 | 8 | .3 | Ω a. ⊤ ⊕ d° p. |
| 20 | 33.5 | 23.1 | 95 | 68 | 6 | 9 | 3.8 | Ω a. ⊤ a. p. ● p. |
| 21 | 33.2 | 22.4 | 97 | 60 | 5 | 4 | 3.8 | Ω a. ☈° ● p. |
| 22 | 32.7 | 23.7 | 92 | 80 | 4 | 9 | 1.5 | Ω ☈ ● a. ●° p. |
| 23 | 31.6 | 22.3 | 96 | 60 | 6 | 8 | .8 | Ω² ⊕ a. ☈ ●° p. |
| 24 | 33.1 | 24.2 | 93 | 69 | 5 | 7 | ------ | ⊕ a. p. ●° ↯² p. |
| 25 | 33.2 | 23.9 | 96 | 89 | 6 | 10 | 2.5 | Ω a. ☈ a. p. ● p. |
| 26 | 34 | 23 | 92 | 61 | 2 | 8 | ------ | Ω a. ☈ p. |
| 27 | 32.3 | 22.5 | 96 | 62 | 7 | 9 | ------ | Ω a. ⊕ a. p. |
| 28 | 31.4 | 23.1 | 94 | 62 | 9 | 8 | ------ | Ω ⊕ a. ◯ p. |
| 29 | 33 | 23.8 | 95 | 60 | 4 | 4 | ------ | Ω a. ↯ p. |
| 30 | 32.6 | 24.1 | 96 | 55 | 5 | 4 | ------ | Ω ≡° a. |
| 31 | 32.6 | 22.9 | 89 | 67 | 5 | 10 | ------ | Ω a. ⊕ a. p. ↯ p. |
| Mean | 32.4 | 23.2 | 93.3 | 68.8 | 5.5 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 131.3 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32 | 22.4 | 86 | 73 | 8 | 10 | ------ | Ω ◯° ⊤ a. ☈² p. |
| 2 | 32.1 | 23.5 | 87 | 66 | 10 | 10 | 22.9 | Ω ⊤² a. ☈² ● p. |
| 3 | 30.7 | 22 | 89 | 73 | 10 | 10 | ------ | Ω² ⊤ a. ☈° p. |
| 4 | 31.2 | 23.2 | 84 | 71 | 10 | 5 | ------ | Ω ◯° a. ☈ p. |
| 5 | 31 | 23.8 | 80 | 73 | 10 | 8 | ------ | ⊤ a. ☈ p. |
| 6 | 31.3 | 23.8 | 97 | 70 | 5 | 9 | ------ | Ω ⊤ a. ◯² ☈² d p. |
| 7 | 30.4 | 24 | 80 | 72 | 10 | 10 | 1 | d² ⊤ a. ω² ϖ ☈ |
| 8 | 32.2 | 24.1 | 90 | 67 | 10 | 7 | ------ | d² ◯ a. ☈ a. p. |
| 9 | 31.6 | 24.5 | 84 | 72 | 10 | 10 | ------ | ⊤ a. ω² ↯² p. |
| 10 | 31.8 | 24.7 | 88 | 71 | 10 | 10 | ------ | ↯² ⌒² d a. ω² ☈ |
| 11 | 31.6 | 23.8 | 87 | 72 | 10 | 7 | 4.6 | d² ☈ a. ☈ ω p. |
| 12 | 31 | 24.3 | 89 | 70 | 10 | 5 | ------ | ●° a. ◯ ☈ p. |
| 13 | 30.9 | 25.2 | 85 | 74 | 10 | 10 | 1.8 | ☈ ● a ☈ ◯° ω p. |
| 14 | 28.3 | 23.4 | 87 | 84 | 10 | 10 | 50.8 | ●² ☈ a. ↯² p. |
| 15 | 31.3 | 23.6 | 87 | 75 | 10 | 10 | ------ | Ω a. ↯ a. p. ◯° p. |
| 16 | 31.7 | 24.2 | 88 | 75 | 10 | 10 | ------ | Ω² ☈ ◯ a. d ↯ |
| 17 | 31.5 | 24.1 | 85 | 74 | 10 | 10 | 1 | Ω a. ☈² ●° p. |
| 18 | 30.3 | 23.2 | 85 | 69 | 10 | 7 | .9 | Ω a. ☈ a. p. ●° |
| 19 | 32.1 | 23.8 | 88 | 72 | 10 | 8 | ------ | Ω² ϖ a. ☈° p. |
| 20 | 32.4 | 24.2 | 77 | 78 | 7 | 9 | ------ | ⊤² ⊕² a. ☈° p. |
| 21 | 31.2 | 24.2 | 85 | 72 | 10 | 10 | ------ | ☈ ⊕ p. |
| 22 | 31.8 | 25.8 | ------ | 75 | 10 | 6 | ------ | Ω² ⊤ a. ☈ ϖ² p. |
| 23 | 31.8 | 24 | 78 | 65 | 10 | 10 | ------ | Ω° ◯² a. ↯ p. |
| 24 | 31.8 | 25.1 | ------ | 72 | 10 | 4 | 1.5 | ☈ ● a. ↯² p. |
| 25 | 31.3 | 24.6 | 83 | 71 | 10 | 10 | 1.5 | ☈ d a ◯ ↯ p. |
| 26 | 31.6 | 23.9 | 91 | 70 | 10 | 7 | ------ | ● ☈ ⌒ a. ↯ p. |
| 27 | 31.1 | 24.3 | 86 | 68 | 10 | 10 | ------ | ☈ d a. ↯ p. |
| 28 | 31.2 | 24.6 | 79 | 73 | 10 | 10 | ------ | Ω° ◯² a. ↯ p. |
| 29 | 32.5 | 23.7 | 77 | 68 | 10 | 8 | ------ | Ω a. ↯ p. |
| 30 | 32 | 24.6 | 79 | 68 | 10 | 10 | ------ | ☈ a. ↯² p. |
| 31 | 32.1 | 25.3 | 84 | 71 | 10 | 10 | ------ | ◯² ↯ p. |
| Mean | 31.4 | 24.1 | 85 | 71.7 | 9.7 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 86 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### YAP, (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 24.4 | 89 | 92 | 5 | 4 | 5.1 | ⌒°a. d°a.p. ● p. |
| 2 | 31.5 | ------ | 95 | 82 | 1 | 6 | 6.8 | ●°d°a.p. ⌒° ⚡°p. |
| 3 | 31.6 | 24.2 | 88 | 74 | 2 | 6 | ------ | |
| 4 | 32.3 | 24.4 | 91 | 73 | 2 | 7 | 14.5 | Ω d° a. |
| 5 | 30.4 | 23.7 | 97 | 79 | 6 | 8 | 26.4 | ●² ⊤°a. ⊍°Φ°p. |
| 6 | 31 | 24.7 | 87 | 72 | 2 | 5 | 6.9 | Ω° a. ⌒° p. |
| 7 | 31.4 | 23.7 | 93 | 71 | 6 | 4 | 21.1 | ●a ◯°⌒°⊍°●²p. |
| 8 | 31.1 | 23.7 | 85 | 73 | 8 | 5 | ------ | ◯° a. |
| 9 | 31 | 25.7 | 88 | 74 | 2 | 6 | 9.9 | Ω° a. ●° ⌒° p. |
| 10 | 30.3 | 24.7 | 93 | 74 | 8 | 6 | 20.1 | ●a.p. ⌒° Φ ⚡ p. |
| 11 | 27.8 | 23.6 | 95 | 79 | 10 | 9 | 6.1 | ●° a. ⊍° p. |
| 12 | 30.5 | 24 | 90 | 75 | 4 | 6 | ------ | Ω²◯°a. d°⌒°p. |
| 13 | 31.1 | 24.4 | 89 | 69 | 4 | 4 | 9.1 | Ω°a. ⌒° d° ● p. |
| 14 | 30.8 | 24 | 91 | 75 | 4 | 6 | 5.1 | d° ⌒° ● p. |
| 15 | 30.4 | 24.3 | 88 | 65 | 4 | 2 | ------ | |
| 16 | 31.4 | 25.1 | 84 | 69 | 3 | 4 | ------ | ⊍ Ω° a. ⚡° p. |
| 17 | 30.9 | 24.8 | 86 | 73 | 6 | 6 | 8.9 | Ω a. ● a. p. ⚡ p. |
| 18 | 31.8 | 24.7 | 84 | 67 | 2 | 3 | 6.6 | ● a. |
| 19 | 31.8 | 25.2 | 86 | 80 | 8 | 8 | .5 | Ω² d° a. ● ⌒° p. |
| 20 | 31.4 | 24.8 | 87 | 63 | 3 | 3 | ------ | Ω a. |
| 21 | 31.6 | 26.1 | 85 | 78 | 3 | 6 | ------ | Ω° a. d° p. |
| 22 | 31.2 | 25.6 | 93 | 75 | 6 | 5 | 2.3 | d° ●° ⌒° a. p. |
| 23 | 31.6 | 25.8 | 83 | 60 | 8 | 3 | .5 | ⌒ ◯° a. |
| 24 | 32.2 | 25.7 | 81 | 74 | 8 | 8 | .8 | ●° ⊕ᶜ a. ⚡ p. |
| 25 | 32.3 | 26.4 | 79 | 69 | 6 | 6 | ------ | |
| 26 | 32.3 | 25.1 | 85 | 67 | 8 | 4 | 2.8 | Γ⚡ a. ◯°⌒°⚡°p. |
| 27 | 30.3 | 24.8 | 96 | 88 | 8 | 9 | 44 | ●² a. |
| 28 | 30.8 | 24 | 93 | 82 | 10 | 8 | .5 | ●° ◯ a. d° p. |
| 29 | 30.6 | 25.4 | 88 | 83 | 4 | 8 | 6.8 | ● a. ●° ⚡ p. |
| 30 | 29.4 | 24.6 | 86 | 84 | 9 | 9 | 35.5 | ● a. p. ⊤° ⚡ p. |
| 31 | 30.9 | 23.8 | 91 | 70 | 9 | 6 | 1.8 | ●d a.p. ◯°∞p. |
| Mean | 31.1 | 24.7 | 88.6 | 74.5 | 5.5 | 5.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 242.1 | |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.8 | 24.2 | 93 | 81 | 10 | 10 | 24.4 | ⊤² ●² a. d Γ⚡² p. |
| 2 | 30.7 | 23.8 | 95 | 79 | 10 | 8 | 31.2 | d ⚡ ●² p. |
| 3 | 30 | 22.5 | 93 | 75 | 10 | 9 | ------ | d ⊤² a. |
| 4 | 30.6 | 23.8 | 92 | 77 | 10 | 10 | ------ | |
| 5 | 30.6 | 24 | 92 | 79 | 10 | 8 | ------ | |
| 6 | 29 | 24 | 93 | 82 | 10 | 10 | ------ | ⊤² d° a. p. ⊍ Φ ⚡ |
| 7 | 30.9 | 23.6 | 92 | 80 | 10 | 8 | ------ | ⚡² Γ⚡² ⊍ p. |
| 8 | 31.4 | 23.2 | 89 | 78 | 10 | 10 | ------ | ⚡ Φ ⊍ p. |
| 9 | 30.4 | 23.8 | 93 | 79 | 10 | 10 | ------ | |
| 10 | 30.8 | 23.4 | 93 | 81 | 8 | 10 | ------ | |
| 11 | 30 | 23.4 | 91 | 79 | 10 | 10 | 12.4 | Γ⚡² d ●° p. |
| 12 | 31.2 | 23.4 | 92 | 83 | 10 | 10 | ------ | ⊍° ⚡ p. |
| 13 | 32.1 | 24 | 92 | 76 | 10 | 10 | ------ | ⊤°d°a. ⚡d°⊍p. |
| 14 | 29.8 | 23.8 | 92 | 80 | 10 | 10 | 12.7 | ⌒° p ⊤² a. d² Γ⚡² |
| 15 | 29.8 | 24 | 92 | 79 | 10 | 10 | ------ | Φ² ⊍ ⚡ p. |
| 16 | 30 | 23.7 | 91 | 80 | 10 | 10 | ------ | d ⊤² a. |
| 17 | 30.8 | 23.6 | 92 | 73 | 10 | 10 | ------ | |
| 18 | 32 | 22.8 | 88 | 74 | 10 | 10 | ------ | ⚡ p. |
| 19 | 31.6 | 24.2 | 92 | 82 | 8 | 10 | ------ | ⌒° ⊤ a. ◯ p. |
| 20 | 31 | 23.6 | 90 | 80 | 10 | 7 | 9.9 | Γ⚡² ●² d p. |
| 21 | 31.8 | 23.8 | 85 | 77 | 10 | 10 | ------ | ⚡² p. |
| 22 | 32 | 24.4 | 89 | 71 | 10 | 10 | ------ | ⚡² p. |
| 23 | 33.5 | 23.5 | 88 | 66 | 10 | 10 | ------ | |
| 24 | 32.5 | 23.6 | 84 | 77 | 10 | 10 | ------ | Γ⚡² p. |
| 25 | 32.5 | 24.8 | 84 | 82 | 10 | 10 | 3 | d² Γ⚡² p. |
| 26 | 31.5 | 23.8 | 92 | 77 | 10 | 10 | ------ | |
| 27 | 32.5 | 24.6 | 91 | 82 | 10 | 10 | ------ | |
| 28 | 31.4 | 24 | 88 | 74 | 10 | 10 | ------ | |
| 29 | 31.4 | 23.7 | 84 | 75 | 10 | 10 | ------ | |
| 30 | 31.3 | 25.1 | 85 | 73 | 10 | 8 | ------ | |
| 31 | 31 | 23.8 | 84 | 69 | 10 | 10 | ------ | ⊍° d ⚡² ⊤° p. |
| Mean | 31.1 | 23.8 | 90 | 77.4 | 9.9 | 9.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 93.6 | |

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | 23.4 | 87 | 77 | 5 | 10 | 4.1 | ⊤ d ⌒ ● Γ⚡ p. |
| 2 | ------ | 22.9 | 91 | 63 | 4 | 7 | 5.1 | d ⊤ ⚡ ● p. |
| 3 | ------ | 23 | 96 | 74 | 10 | 10 | 1.3 | ● d a. ⊤ ● ⚡ p. |
| 4 | ------ | 23.4 | 93 | 69 | 9 | 6 | ------ | d ⚡ p. |
| 5 | ------ | 23.3 | 91 | 81 | 7 | 10 | ------ | ⊤ a. p. ⚡ Φ p. |
| 6 | ------ | 23.4 | 90 | 71 | 6 | 8 | ------ | Ω a. ⊤ ⚡ d° p. |
| 7 | ------ | 23.5 | 95 | 70 | 10 | 9 | ------ | d p. |
| 8 | ------ | 22.5 | 86 | 66 | 5 | 8 | ------ | ⊤ ⚡ p. |
| 9 | ------ | 23.4 | 87 | 77 | 9 | 10 | ------ | ⊤ a. p. d ◯ ⚡ p. |
| 10 | ------ | 23 | 85 | 66 | 7 | 9 | ------ | ⊤ a. p. Γ⚡ p. |
| 11 | 34.9 | 22.9 | 87 | 71 | 3 | 9 | ------ | ⊤ ⚡ p. |
| 12 | 35.3 | 23.5 | 91 | 64 | 7 | 8 | ------ | d² Γ⚡ ⌒ p. |
| 13 | 35.9 | 23.5 | 88 | 72 | 9 | 9 | 1.8 | ⊤ a. p. d² ● Γ⚡ p. |
| 14 | 33.8 | 23.5 | 91 | 91 | 7 | 10 | 4.3 | ⊤ ⚡ ●°a. ● Γ⚡ p. |
| 15 | 33.8 | 23.6 | 95 | 77 | 10 | 10 | 55.9 | Γ⚡ ●² p. |
| 16 | 31.9 | 23 | 90 | 70 | 10 | 10 | 74.2 | ●² Γ⚡ p. |
| 17 | 32.8 | 22.7 | 92 | 68 | 2 | 4 | 18 | ● Γ⚡ ⌒ p. |
| 18 | 32.8 | 22 | 87 | 73 | 2 | 8 | ------ | ⊤ d° ⚡ p. |
| 19 | 32.4 | 23.4 | 88 | 70 | 8 | 7 | ------ | Ω² a. ⊤ ⚡ p. |
| 20 | 33.4 | 24 | 88 | 70 | 3 | 10 | ------ | Ω² ⊤ a. ⊤ ⌒ ⚡ p. |
| 21 | 33.4 | 23.6 | 86 | 67 | 2 | 9 | ------ | Ω² a. ⊤ ⚡ p. |
| 22 | 34.3 | 23.6 | 91 | 77 | 2 | 9 | 1.3 | Ω² a. d ● Γ⚡ p. |
| 23 | 32.8 | 24.1 | 87 | 66 | 10 | 8 | ------ | Ω a |
| 24 | 35.4 | 23.5 | 88 | 57 | 10 | 5 | 24.6 | Ω² a. ⚡ p. |
| 25 | 31.8 | 23.5 | 92 | 75 | 10 | 10 | .5 | ● Γ⚡ a. ⊤ ● ⚡ |
| 26 | 32.8 | 23.5 | 87 | 83 | 6 | 10 | .3 | ⊤ d² ● ⚡ p. |
| 27 | 31.7 | 23.4 | 87 | 75 | 9 | 10 | ------ | ⚡ p. |
| 28 | 33.8 | 24 | 91 | 72 | 9 | 10 | 3 | Ω² a. ● ⊤ ⚡ p. |
| 29 | 32.6 | 24 | 94 | 70 | 10 | 8 | .3 | ⊤ a. ⌒ ●° Γ⚡ p. |
| 30 | 33.9 | 24 | 87 | 72 | 1 | 8 | ------ | ⊤ ⚡ p. |
| 31 | 33.3 | 23.6 | 90 | 72 | 9 | 9 | 2.8 | Ω² a. Γ⚡ d° ● p. |
| Mean | 33.5 | 23.4 | 89.6 | 71.8 | 6.8 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 197.5 | |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.2 | 26.1 | 90 | 75 | 8 | 9 | 3.3 | ●° a. ⚡ p. |
| 2 | 32.4 | 26.4 | 82 | 62 | 9 | 9 | 18.8 | ●°a. ⊕² ● Γ⚡ p. |
| 3 | 30.3 | 24.6 | 84 | 73 | 10 | 9 | 9.4 | ●° ⊤°a. ● ⊤ p. |
| 4 | 31.8 | 24.1 | 94 | 70 | 10 | 9 | ------ | ⊤ a. d° p. |
| 5 | 30.6 | 25.3 | 90 | 76 | 9 | 10 | 3.8 | ⊤ a. ●° a. p. |
| 6 | 32.6 | 24.3 | 94 | 78 | 8 | 9 | 15.7 | Γ⚡ p. |
| 7 | 31.6 | 22.9 | 95 | 71 | 10 | 8 | ------ | Γ⚡ ●² d a. ⚡ p. |
| 8 | 33.1 | 23.6 | 97 | 65 | 8 | 6 | ------ | |
| 9 | 33.6 | 23.9 | 95 | 62 | 8 | 8 | ------ | d° a. |
| 10 | 32.1 | 24.5 | 96 | 64 | 8 | 9 | ------ | |
| 11 | 32.9 | 25.4 | 93 | 64 | 9 | 8 | ------ | Ω d a. |
| 12 | 32.8 | 27 | 82 | 68 | 9 | 9 | ------ | ◯² a. Γ⚡ p. |
| 13 | 32.8 | 27.6 | 80 | 69 | 10 | 9 | ------ | d p. |
| 14 | 28.8 | 25.3 | 95 | 82 | 9 | 10 | 20 | Γ⚡ a. ● a. p. |
| 15 | 29.2 | 24.8 | 98 | 82 | 10 | 10 | 24.6 | ●° a. p. ⚡ p. |
| 16 | 31.7 | 24.5 | 94 | 76 | 10 | 9 | 20.6 | ⊤ ●² a. Γ⚡ ● p. |
| 17 | 31.2 | 23.5 | 97 | 82 | 10 | 8 | 6.4 | ● a. ⊤ p. |
| 18 | 32.1 | 23.9 | 97 | 82 | 9 | 10 | 15 | ●° a. ● ⚡ p. |
| 19 | 32.4 | 24.5 | 97 | 67 | 8 | 8 | 25.6 | ● a. ⚡ p. |
| 20 | 32.3 | 24.1 | 95 | 68 | 10 | 9 | 2.8 | ⊤ ● a. Γ⚡ p. |
| 21 | 32.4 | 24.9 | 95 | 67 | 8 | 8 | ------ | ⚡ p. |
| 22 | 33.6 | 25.4 | 93 | 66 | 8 | 7 | ------ | d° a. Γ⚡ p. |
| 23 | 33.3 | 26.5 | 93 | 62 | 9 | 9 | ------ | Ω a. |
| 24 | 33.2 | 25.5 | 95 | 63 | 9 | 8 | .8 | Ω ≡° a. |
| 25 | 31.4 | 25.9 | 86 | 74 | 10 | 9 | 4.1 | ● Γ⚡ a. ⚡ p. |
| 26 | 32.8 | 25 | 96 | 63 | 9 | 8 | 6.6 | ● a. Γ⚡ p. |
| 27 | 31.7 | 25.1 | 92 | 77 | 9 | 9 | 7.4 | d ⊤ ⌒ a. ● ⚡ p. |
| 28 | 33.8 | 25.1 | 96 | 70 | 9 | 8 | ------ | ⚡ p. |
| 29 | 32.8 | 24.9 | 93 | 72 | 10 | 9 | 8.1 | ●° d a. ⊤ ● p. |
| 30 | 33.1 | 23.6 | 98 | 64 | 9 | 8 | 1.8 | ●° p. |
| 31 | 31.8 | 25 | 95 | 71 | 9 | 9 | 5.3 | ● a. ⚡ p. |
| Mean | 32.1 | 24.9 | 92.8 | 70.5 | 9.1 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 200.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.9 | 22.7 | 97 | 74 | 2 | 7 | 2 | Ω d a. ⊤ ● ϟ p. |
| 2 | 30.8 | 21.6 | 97 | 67 | 2 | 4 | ------ | Ω ≡ a. ϟ p. |
| 3 | 30.7 | 21.9 | 96 | 69 | 1 | 4 | 4.1 | Ω ≡° a. ◯° ϟ ⊎ p. |
| 4 | 30.5 | 23.5 | 97 | 81 | 7 | 6 | 12.4 | ● ≡ a. ⊎ [ϟ p. |
| 5 | 30.5 | 23.5 | 97 | 82 | 8 | 8 | 11.2 | ● d ⊤ a. ϟ ⊎° p. |
| 6 | 31 | 23.3 | 97 | 77 | 4 | 7 | .3 | ◯° a. ● a. p. ⌒ ϟ |
| 7 | 31.6 | 22.5 | 97 | 88 | 4 | 9 | 33.5 | ≡ a. ⊤ ● ⊎ ϟ p. |
| 8 | 30.8 | 22.3 | 97 | 71 | 3 | 4 | ------ | ● [ϟ a. ϟ ⊎° p. |
| 9 | 31 | 22.6 | 96 | 66 | 2 | 3 | ------ | Ω ≡° a. ⊤ ⊎ ϟ p. |
| 10 | 31.2 | 22.5 | 97 | 70 | 3 | 6 | ------ | Ω ≡ a. ⊤ ϟ ⊎° p. |
| 11 | 30.9 | 23 | 97 | 75 | 5 | 6 | 8.1 | Ω a. ● a. p. ⊤ ϟ |
| 12 | 31 | 23.5 | 97 | 67 | 5 | 5 | 25.4 | ● ≡ d a. ϟ p. |
| 13 | 27.3 | 22.7 | 96 | 89 | 10 | 10 | 24.2 | ● a. ϟ p. |
| 14 | 27.1 | 22.5 | 97 | 96 | 9 | 10 | 71.4 | ● ≡ a. ●² ⊤² p. |
| 15 | 30.6 | 22.2 | 97 | 79 | 6 | 7 | 5.1 | ≡ a. ⊤ ϟ ●° p. |
| 16 | 30.5 | 23 | 97 | 78 | 6 | 9 | 6.1 | ● ≡ a. d ϟ p. |
| 17 | 30.2 | 22 | 97 | 83 | 5 | 6 | 6.4 | ⊤ Ω ≡ a ● p. |
| 18 | 30.3 | 22 | 98 | 75 | 3 | 6 | ------ | Ω ≡ a. ϟ° p. |
| 19 | 30.2 | 22.3 | 97 | 71 | 6 | 5 | ------ | Ω ≡ a. ⊤ ϟ p. |
| 20 | 31.4 | 23 | 97 | 74 | 4 | 6 | .2 | Ω ≡ a. ⊤ ●° ϟ p. |
| 21 | 31.5 | 23 | 97 | 71 | 1 | 5 | .8 | Ω ≡ a. ϟ p. |
| 22 | 31.5 | 23.4 | 97 | 67 | 4 | 5 | ------ | ●° a. ⌒ ϟ p. |
| 23 | 31.2 | 23 | 97 | 68 | 3 | 4 | 3 | Ω ≡ ●° a. ϟ° p. |
| 24 | 31.9 | 23 | 97 | 72 | 4 | 5 | ------ | Ω ≡ a. d p. |
| 25 | 30.3 | 23.3 | 92 | 69 | 4 | 5 | ------ | Ω d a. d ◯° ϟ p. |
| 26 | 31.8 | 22.6 | 98 | 70 | 2 | 4 | ------ | Ω ≡ a. ϟ p. |
| 27 | 31.5 | 23.2 | 97 | 71 | 3 | 4 | 1.8 | Ω ◯ a. ◯° ϟ° ●° p |
| 28 | 31.9 | 23 | 97 | 67 | 1 | 4 | ------ | ≡ ⊕ a. ϟ p. |
| 29 | 31.9 | 22.7 | 97 | 69 | 2 | 4 | ------ | Ω ≡ a. ⊤ ϟ p. |
| 30 | 32.1 | 23 | 97 | 64 | 4 | 5 | 2.8 | Ω ≡ a. ϟ ● P. |
| 31 | 29.7 | 23.6 | 97 | 87 | 7 | 8 | 10.2 | ⌒° ⊤ ●° a. ϟ ● p. |
| Mean | 30.8 | 22.8 | 96.8 | 74.4 | 4.2 | 5.8 | ---- | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 229 | |

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.2 | 25.2 | 91 | 73 | 8 | 7 | ------ | |
| 2 | 29.4 | 25 | 92 | 83 | 8 | 8 | 10.9 | |
| 3 | 30.4 | 24.4 | 88 | 75 | 9 | 8 | 1.5 | |
| 4 | 31.6 | 24.6 | 95 | 82 | 4 | 9 | ------ | |
| 5 | 30.6 | 23.8 | 88 | 70 | 7 | 9 | ------ | |
| 6 | 31.8 | 24.4 | 95 | 70 | 7 | 8 | ------ | |
| 7 | 30.4 | 24.5 | 92 | 79 | 9 | 9 | .5 | |
| 8 | 31.8 | 23.6 | 93 | 83 | 9 | 9 | ------ | |
| 9 | 31.6 | 24.2 | 95 | 82 | 8 | 8 | ------ | |
| 10 | 32.6 | 24.6 | 95 | 59 | 9 | 8 | ------ | |
| 11 | 32.5 | 25 | 94 | 64 | 8 | 8 | ------ | |
| 12 | 32.5 | 26.5? | 90 | 59 | 8 | 4 | ------ | |
| 13 | 32 | 26 | 87 | 71 | 9 | 8 | ------ | |
| 14 | 31.8 | 25.4 | 86 | 77 | 9 | 10 | 46.7 | |
| 15 | 30.2 | 23.6 | 95 | 66 | 9 | 8 | ------ | |
| 16 | 31.4 | 25.5 | 90 | 71 | 7 | 9 | ------ | |
| 17 | 31.5 | 23.8 | 93 | 60 | 9 | 6 | ------ | |
| 18 | 31.6 | 24 | 93 | 57 | 8 | 6 | ---- | |
| 19 | 31 | 25.2 | 95 | 75 | 8 | 7 | .3 | |
| 20 | 32 | 24.8 | 92 | 84 | 8 | 9 | 6.7 | |
| 21 | 31.6 | 24.8 | 93 | 81 | 8 | 8 | ------ | |
| 22 | 33.2 | 24.6 | 94 | 64 | 8 | 6 | ------ | |
| 23 | 32.6 | 25 | 97 | 60 | 9 | 8 | ------ | |
| 24 | 32.4 | 25.6 | 90 | 80 | 9 | 7 | ------ | |
| 25 | 32.6 | 25.8 | 94 | ------ | 8 | 8 | ------ | |
| 26 | 33 | 25.4 | 93 | 72 | 9 | 7 | ------ | |
| 27 | 33.6 | 25.8 | 91 | 68 | 9 | 8 | ------ | |
| 28 | 33.6 | 26.2 | 87 | 55 | 9 | 7 | ------ | |
| 29 | 33.5 | 24.8 | 94 | 92 | 9 | 10 | .3 | |
| 30 | 33.6 | 24.6 | 93 | 71 | 8 | 7 | ------ | |
| 31 | 32.5 | 25.5 | 89 | 72 | 8 | 8 | ------ | |
| Mean | 31.9 | 24.9 | 92.1 | 71.8 | 8.2 | 7.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 66.9 | |

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.4 | 23.9 | ------ | ------ | 7 | 5 | 0.3 | |
| 2 | 30.5 | 22.9 | 94 | 75 | 8 | 5 | ------ | |
| 3 | 29.9 | 23.1 | 89 | 74 | 8 | 8 | ------ | |
| 4 | 30.1 | 23.6 | 90 | 97 | 7 | 9 | 7.6 | |
| 5 | 29.5 | 23.3 | 97 | 90 | 5 | 8 | 21.6 | |
| 6 | 29.9 | 22.6 | 96 | 80 | 4 | 7 | 17.8 | |
| 7 | 30.2 | 23.6 | 97 | 78 | 9 | 9 | 10.7 | |
| 8 | 30.5 | 23 | 93 | 83 | 9 | 7 | ------ | |
| 9 | 30.5 | 23.6? | 92 | 59 | 3 | 8 | 7.4 | |
| 10 | 30.7 | 23.2 | 99 | 76 | 7 | 9 | ------ | |
| 11 | 30.6 | 23.5? | 93 | 75 | 4 | 7 | .5 | |
| 12 | 30.6 | 23.6 | 96 | 75 | 5 | 6 | 10.2 | |
| 13 | 28.6 | 23.5 | 97 | 84 | 7 | 8 | 28.4 | |
| 14 | 30.1 | 23.5 | 91 | 92 | 9 | 10 | 17.1 | |
| 15 | 30.1 | 22.7 | 91 | 92 | 8 | 9 | 15.7 | |
| 16 | 30 | ------ | 98 | 81 | 9 | 8 | 1.3 | |
| 17 | 30.1 | ------ | 98 | 75 | 1 | 5 | ------ | |
| 18 | 30.5 | 22 | ------ | 72 | 5 | 5 | ------ | |
| 19 | 30.7 | 22.6 | 98 | 70 | 3 | 5 | ------ | |
| 20 | 31.5 | 23.6? | 98 | 91 | 4 | 9 | 20.6 | |
| 21 | 30.7 | 22.7 | 96 | 85 | 9 | 1 | .8 | |
| 22 | 31.7 | 22.7 | 99 | 63 | 5 | 5 | ------ | |
| 23 | 30.7 | 22.7 | 97 | 77 | 4 | 4 | ------ | |
| 24 | 32.5 | 23.7 | 96 | 90 | 3 | 3 | ------ | |
| 25 | 30.1 | 23.5 | 96 | 85 | 5 | 7 | 1.8 | |
| 26 | 31.5 | 23.2 | 95 | 75 | 3 | 7 | ------ | |
| 27 | 31.4 | ------ | 98 | 75 | 3 | 7 | ------ | |
| 28 | 31.5 | 23 | 92 | 72 | 5 | 6 | ------ | |
| 29 | 32 | 23 | 91 | 72 | 5 | 6 | ------ | |
| 30 | 32 | 23.5 | 96 | 78 | 7 | 7 | 2.8 | |
| 31 | 30.1 | 23.6 | 97 | 66 | 9 | 10 | 1.3 | |
| Mean | 30.6 | 23.2 | 95.2 | 78.6 | 5.8 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 165.9 | |

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 23.5 | 96 | 79 | 8 | 8 | ------ | |
| 2 | 30.6 | 23.9 | 93 | 78 | 9 | 10 | ------ | d° a. ⊤ p. |
| 3 | 29.6 | 23.7 | 96 | 75 | 10 | 8 | ------ | ● a. ●° a. p. |
| 4 | 30.3 | 23.1 | 97 | 83 | 9 | 10 | ------ | ●° a. d ⊤ p. |
| 5 | 29.5 | 23.2 | 97 | 82 | 10 | 10 | ------ | ●° ⊤ a. [ϟ p. |
| 6 | 29.5 | 23.7 | 97 | 83 | 9 | 8 | ------ | ●° a. |
| 7 | 29.3 | 23.8 | 97 | 83 | 10 | 9 | ------ | d p. |
| 8 | 31 | 22.7 | 96 | 72 | 8 | 9 | ------ | ⊤ p. |
| 9 | 31.5 | 23.5 | 96 | 75 | 8 | 8 | ------ | d ⊤ a. |
| 10 | 31.5 | 24.2 | 97 | 77 | 9 | 9 | ------ | ⊤ a. |
| 11 | 31.3 | 24.2 | 96 | 74 | 6 | 9 | 12.7 | d a. |
| 12 | 31 | 24 6 | 98 | 78 | 8 | 8 | 7.3 | ● a. d a. p. ϟ p. |
| 13 | 30 | 24.2 | 94 | 82 | 8 | 8 | 4.1? | ●° a. ⊎° p. |
| 14 | 30.3 | 23.6 | 97 | 85 | 7 | 10 | ------ | ●° a. ⊤ p. |
| 15 | 30.4 | 24 | 97 | 81 | 10 | 10 | 14.7 | d a. ⊤ ⊎° p. |
| 16 | 29.8 | 24 7 | 96 | 79 | 10 | 10 | ------ | ● a. ⊤ a. p. |
| 17 | 30.6 | 23.5 | 97 | 77 | 7 | 8 | ------ | |
| 18 | 31.3 | 22.5 | 97 | 73 | 6 | 6 | ------ | |
| 19 | 31.4 | 23 | 96 | 77 | 8 | 8 | ------ | |
| 20 | 31.5 | 24.7 | 95 | 79 | 7 | 10 | ------ | ⊤ p. |
| 21 | 31.4 | 23.9 | 97 | 75 | 8 | 8 | ------ | |
| 22 | 31.8 | 24.5 | 95 | 79 | 9 | 6 | ------ | |
| 23 | 31.5 | 24.2 | 94 | 75 | 7 | 8 | ------ | |
| 24 | 32 | 24 | 95 | 78 | 7 | 7 | ------ | |
| 25 | 32.3 | 24.4 | 96 | 74 | 6 | 8 | ------ | |
| 26 | 32.3 | 24 | 96 | 67 | 6 | 9 | ------ | |
| 27 | 32 | 25 | 95 | 74 | 6 | 8 | ------ | |
| 28 | 32 | 26.9 | 82 | 74 | 6 | 7 | ------ | |
| 29 | 32.9 | 23 3 | 96 | 77 | 7 | 10 | ------ | [ϟ p. |
| 30 | 32.1 | 23.8 | 96 | 59 | 7 | 8 | 4.1? | |
| 31 | 31.3 | 24.8 | 90 | 68 | 10 | 10 | 4.1? | d a. p. ⊤ p. |
| Mean | 31.1 | 24 | 95.4 | 76.5 | 7.9 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 47[1] | |

[1] 21 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30 | 24.2 | 81 | 77 | 2 | 8 | ------ | |
| 2 | 32.2 | 23 | 84 | 65 | 3 | 8 | ------ | |
| 3 | 31 | 23 | 84 | 68 | 5 | 7 | 19 | |
| 4 | 30.6 | 23 | 84 | 71 | 3 | 5 | ------ | |
| 5 | 29.8 | 23.8 | 78 | 74 | 8 | 8 | .8 | |
| 6 | 30 | 22 | 83 | 70 | 6 | 10 | ------ | |
| 7 | 30.8 | 22 | 81 | 62 | 3 | 5 | ------ | |
| 8 | 30 | 22 | 85 | 76 | 10 | 10 | 6.4 | |
| 9 | 30.8 | 23.8 | 92 | 68 | 10 | 10 | 2.5 | |
| 10 | 30.2 | 23.4 | 84 | 67 | 6 | 10 | ------ | |
| 11 | 30.8 | 25.4 | 84 | 67 | 6 | 5 | ------ | |
| 12 | 31.2 | 24.6 | 84 | 71 | 5 | 8 | 8.9 | |
| 13 | 30.2 | 24 | 84 | 59 | 6 | 10 | 4.3 | |
| 14 | 30 | 23.8 | 84 | 66 | 10 | 6 | ------ | |
| 15 | 30.8 | 25 | 84 | 66 | 5 | 10 | ------ | |
| 16 | 30.2 | 24.8 | 84 | 78 | 6 | 8 | 2.5 | |
| 17 | 30.2 | 23.4 | 84 | 71 | 7 | 6 | ------ | |
| 18 | 30.6 | 23.4 | 81 | 71 | 8 | 10 | 1.3 | |
| 19 | 31 | 24.2 | 81 | 68 | 10 | 7 | ------ | |
| 20 | 29.6 | 24 | 80 | 71 | 2 | 8 | 4.5 | |
| 21 | 31.4 | 24.8 | 84 | 65 | 5 | 6 | 3 | |
| 22 | 30.4 | 25.2 | 86 | 66 | 10 | 5 | .8 | |
| 23 | 30.6 | 26.2 | 81 | 62 | 4 | 8 | ------ | |
| 24 | 31 | 25.4 | 80 | 64 | 6 | 10 | ------ | |
| 25 | 30.6 | 25.6 | 86 | 66 | 10 | 10 | ------ | |
| 26 | 30.4 | 25.4 | 84 | 71 | 10 | 10 | 6.4 | |
| 27 | 31.6 | 24.6 | 87 | 65 | 10 | 10 | ------ | |
| 28 | 30.4 | 25.8 | 84 | 80 | 10 | 10 | 8.9 | |
| 29 | 30 | 24.6 | 84 | 68 | 10 | 10 | ------ | |
| 30 | 30 | 26 | 81 | 71 | 10 | 9 | 2 | |
| 31 | 29.4 | 25.2 | 84 | 71 | 10 | 10 | ------ | |
| Mean | 30.5 | 24.2 | 83.5 | 68.9 | 7 | 8.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 71.3 | |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.5 | 23.1 | 97 | 78 | 8 | 9 | 0.8 | ⊤ p p. |
| 2 | 32.1 | 24 | 95 | 65 | 10 | 10 | 5.1 | d$^2$ ↯ p. |
| 3 | 30.8 | 23.8 | 95 | 68 | 10 | 7 | 3.9 | p a. ●° a. p. |
| 4 | 30.6 | 24.1 | 92 | 73 | 10 | 5 | 49.3 | ●° a. ●$^2$ ⌈↯ p. |
| 5 | 31.2 | 23.1 | 97 | 76 | 10 | 9 | 13 | ●$^2$⌈↯ a. ●°⌈↯ p. |
| 6 | 30.9 | 23.1 | 100 | 67 | 10 | 7 | 8.4 | ●° ⌈↯ p. |
| 7 | 30.2 | 23.3 | 97 | 75 | 10 | 10 | ------ | ⊤ a. p. |
| 8 | 30.5 | 21.8 | 85 | 71 | 8 | 10 | ------ | ⊤ a. p. |
| 9 | 32 | 22.5 | 89 | 76 | 10 | 8 | ------ | ⊤ a. p. |
| 10 | 32 | 21.9 | 92 | 68 | 7 | 9 | ------ | ⊤ a. p. |
| 11 | 32 | 22.5 | 86 | 65 | 10 | 7 | 7.9 | ⊤ a. ⌈↯$^2$ ●° p. |
| 12 | 31.6 | 24.1 | 89 | 65 | 10 | 10 | 7.1 | ●° ⌈↯ p. |
| 13 | 31.8 | 23.7 | 94 | 74 | 10 | 5 | .3 | ⊤ ●° a. ↯ p. |
| 14 | 31.9 | 23.9 | 91 | 68 | 8 | 10 | 1 | ⌈↯ p. |
| 15 | 31.7 | ------ | 94 | 70 | 8 | 10 | 8.2 | ●$^2$ ⊤ a. p. ↯ p. |
| 16 | 28.2 | 23.1 | 96 | 78 | 10 | 10 | 27.7 | ●$^2$ a. |
| 17 | 32.1 | 23.1 | 87 | 68 | 10 | 6 | ------ | |
| 18 | 31.6 | 22.5 | 94 | 67 | 9 | 9 | ------ | ↯ p. |
| 19 | 31.7 | 22.2 | 91 | 69 | 9 | 7 | ------ | ⊤ p. |
| 20 | 31.5 | 21.6 | 94 | 69 | 8 | 10 | 13.5 | ⊤ ●$^2$ a. |
| 21 | 32.7 | 22.5 | 92 | 65 | 10 | 8 | ------ | |
| 22 | 32.8 | 22.4 | 89 | 67 | 9 | 5 | ------ | |
| 23 | 32.2 | 23.1 | 84 | 73 | 10 | 10 | ------ | |
| 24 | 32.4 | 23.1 | 74 | 64 | 8 | 8 | ------ | |
| 25 | 32.3 | 23.6 | 87 | 65 | 10 | 10 | ------ | |
| 26 | 32.7 | 22.6 | 87 | 64 | 10 | 10 | ------ | |
| 27 | 32.7 | 23.1 | 84 | 66 | 10 | 10 | ------ | ⊤ p. |
| 28 | 33.1 | 23.6 | 83 | 69 | 8 | 8 | ------ | ⊤ ↯ p. |
| 29 | 33.1 | 24.1 | 84 | 63 | 8 | 8 | ------ | ⊤ a. p. |
| 30 | 33.5 | 23.1 | 90 | 69 | 10 | 9 | .5 | ↯ p. |
| 31 | 34 | 24.1 | 93 | 68 | 10 | 10 | 11.4 | ⌈↯ a. ●° a. p. |
| Mean | 31.9 | 23.1 | 90.4 | 69.1 | 9.3 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 158.1 | |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$= 124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.7 | 22.9 | 92 | 89 | 5 | 8 | 29.6 | ●$^2$ a. ● p. |
| 2 | 29.6 | 23.5 | 96 | 90 | 5 | 9 | 38.5 | ●$^2$ a. ● ⊤ ↯ p. |
| 3 | 29.4 | 23.1 | 92 | 93 | 10 | 10 | 14.7 | ● a. ●° a. p. |
| 4 | 31 | 22.5 | 96 | 72 | 4 | 5 | ------ | Ω$^2$ p° a. |
| 5 | 30 | 23.2 | 95 | 82 | 6 | 8 | 3 | Ω$^2$ ●° a. ⊤↯ p. |
| 6 | 30.3 | 23 | 97 | 77 | 8 | 6 | 29.5 | ● a. p. d ⌒° p. |
| 7 | 29.4 | 23 | 98 | 79 | 7 | 6 | 7.5 | ● a. ●° a. p. |
| 8 | 30.8 | 22.5 | 96 | 74 | 7 | 7 | ------ | ● a. |
| 9 | 31.3 | 23.3 | 96 | 74 | 8 | 8 | .6 | d° ● a. ↯ p. |
| 10 | 31.3 | 22.5 | 95 | 74 | 8 | 8 | ------ | Ω° a. ⊕ p. |
| 11 | 31.3 | 22.8 | 92 | 76 | 2 | 6 | ------ | Ω a. ⊤ ⊕° p. |
| 12 | 32 | 22.4 | 92 | 74 | 5 | 8 | .3 | ⊂ a. |
| 13 | 31.2 | 22.8 | 96 | 75 | 10 | 8 | 6.6 | d a. ⌒ ● p. |
| 14 | 31.7 | 22.8 | 95 | 64 | 8 | 9 | 24.9 | ● a. p. ⌈↯ p. |
| 15 | 30.8 | 23 | 96 | 77 | 10 | 5 | 6.4 | ● a. |
| 16 | 29.9 | 23.8 | 94 | 78 | 10 | 6 | 22.1 | ●$^2$ ⊤ a. ● p. |
| 17 | 30.8 | 23.3 | 95 | 73 | 4 | 4 | ------ | |
| 18 | 30.5 | 22.2 | 95 | 72 | 3 | 4 | .9 | Ω a. |
| 19 | 30.6 | 22.1 | 96 | 70 | 5 | 5 | 23.4 | ● a. p. ↯ p. |
| 20 | 30.3 | 24 | 90 | 89 | 9 | 9 | 30.4 | ●$^2$ ⌒ a. ● a. p. |
| 21 | 31.6 | 23.5 | 97 | 78 | 8 | 6 | ------ | ● a. ⊤ p. |
| 22 | 31.4 | 23.8 | 95 | 77 | 7 | 7 | ------ | d° a. |
| 23 | 31.4 | 22.8 | 96 | 70 | 10 | 7 | ------ | |
| 24 | 31.6 | 23 | 94 | 78 | 7 | 6 | 2.8 | ● p. |
| 25 | 31.4 | 24 | 96 | 76 | 8 | 7 | 1 | d a. ●° p. |
| 26 | 32.2 | 24 | 96 | 69 | 9 | 5 | ------ | ⊤ a. |
| 27 | 31.8 | 24 | 92 | 75 | 8 | 9 | ------ | |
| 28 | 32.2 | 23.5 | 95 | 68 | 10 | 7 | ------ | |
| 29 | 32.8 | 23.2 | 92 | 71 | 9 | 8 | ------ | ⊤ a. |
| 30 | 33.3 | 23.2 | 92 | 61 | 4 | 3 | 7.1 | ● p. |
| 31 | 31.5 | 23.4 | 96 | 88 | 10 | 10 | 31 | ●$^2$ ⌈↯ p. |
| Mean | 31.1 | 23.1 | 94.7 | 76.2 | 7.2 | 6.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 280.3 | |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.1 | 21.9 | 97 | 67 | 6 | 5 | 0.2 | |
| 2 | 27.2 | 23 | 93 | 92 | 8 | 10 | 33 | ●° d a. p. |
| 3 | 28.6 | 21.9 | 96 | 85 | 10 | 10 | 1.2 | ●° d a. p. ⊤° p. |
| 4 | 31.7 | 20 | 98 | 86 | 4 | 8 | 1.9 | ●° a. p. ⊤° p. |
| 5 | 31 | 21.8 | 98 | 89 | 9 | 9 | 41.1 | ●° a. d p. |
| 6 | 32.4 | 21.1 | 98 | 78 | 10 | 10 | 1 | ≡° a. d ●° p. |
| 7 | 32.4 | 21.8 | 98 | 62 | 10 | 7 | ------ | |
| 8 | 33 | 21.6 | 98 | 64 | 10 | 8 | ------ | |
| 9 | 34.6 | 21.5 | 97 | 68 | 10 | 8 | ------ | ≡° a. ⊤° p. |
| 10 | 34 | 21.7 | 98 | 78 | 9 | 10 | ------ | ≡° a. d ⊤° p. |
| 11 | 34.8 | 20.7 | 99 | 71 | 5 | 8 | ------ | ⊤° p. |
| 12 | 34.1 | 21.9 | 97 | 77 | 6 | 8 | ------ | |
| 13 | 34.6 | 21.8 | 98 | 83 | 7 | 8 | 9.1 | ●° ⊤° p. |
| 14 | 34.5 | 22 | 97 | 71 | 7 | 8 | ------ | |
| 15 | 34.3 | 21.6 | 97 | 90 | 5 | 10 | 13.2 | ● ⊤° p. |
| 16 | 30.6 | 22 | 98 | 78 | 9 | 9 | .3 | d a. |
| 17 | 32.8 | 20.7 | 96 | 70 | 5 | 8 | 7.6 | ● ⊤° p. |
| 18 | 34.1 | 20.5 | 98 | 73 | 4 | 8 | ------ | ⊤° p. |
| 19 | 33.5 | 21.2 | 96 | 56 | 5 | 8 | ------ | ⊤° p. |
| 20 | 32.6 | 21.4 | 97 | 76 | 3 | 9 | ------ | ⊤° p. |
| 21 | 35 | 21.4 | 98 | 58 | 10 | 8 | ------ | ≡° a. ⊤° p. |
| 22 | 34 | 21 | 96 | 66 | 6 | 8 | 4.3 | ⊤° ●° p. |
| 23 | 34.1 | 21.1 | 96 | 63 | 8 | 9 | ------ | |
| 24 | 34.5 | 20.8 | 96 | 62 | 7 | 8 | ------ | |
| 25 | 35.9 | 22 | 95 | 92 | 9 | 9 | 19.8 | ●$^2$ ⌈↯ p. |
| 26 | 34.9 | 21 | 98 | 87 | 7 | 8 | 33.5 | ● ⌈↯ p. |
| 27 | 34.6 | 22 | 97 | 69 | 8 | 9 | ------ | ⊤° d p. |
| 28 | 34.4 | 22.2 | 98 | 62 | 8 | 9 | ------ | |
| 29 | 34.8 | 21 | 95 | 56 | 6 | 7 | ------ | |
| 30 | 35.3 | 22.7 | 95 | 91 | 5 | 10 | 15.4 | ● ⌈ p. |
| 31 | 34.2 | 23.1 | 96 | 50 | 7 | 8 | 5.3 | ●° ⊤° p. |
| Mean | 33.4 | 21.6 | 96.9 | 73.2 | 7.2 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 186.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BATANGAS.

[$\phi$= 13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. c. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 21.6 | 97 | 95 | 6 | 10 | 24.6 | ●$^2$ ☈$^2$ p. |
| 2 | 32 | 22.4 | 97 | 65 | 5 | 7 | ------ | ○ p. |
| 3 | 33.7 | 23.3 | 89 | 59 | 6 | 5 | ------ | |
| 4 | 32.4 | 22.8 | 94 | 61 | 7 | 7 | 4.6 | ●$^2$ p. |
| 5 | 33.6 | 23.3 | 94 | 59 | 7 | 7 | ------ | |
| 6 | 33.2 | 22 | 91 | 77 | 4 | 9 | ------ | d° p. |
| 7 | 31.5 | 23.2 | 97 | 75 | 7 | 9 | ------ | ⊎ p. |
| 8 | 31.8 | 21.2 | 95 | 65 | 1 | 6 | ------ | |
| 9 | 32.4 | 22.1 | 97 | 71 | 4 | 9 | ------ | |
| 10 | 32.7 | 22.3 | 96 | 71 | 3 | 7 | ------ | ⊤ p. |
| 11 | 32.8 | 22.7 | 97 | 66 | 3 | 6 | 2 | ● a. p. ⊤ p. |
| 12 | 33.8 | 23 | 91 | 57 | 5 | 6 | ------ | |
| 13 | 32.8 | 22.3 | 97 | 58 | 6 | 6 | ------ | |
| 14 | 35 | 23.6 | 92 | 61 | 5 | 6 | ------ | ○ p. |
| 15 | 32.7 | 22.3 | 91 | 66 | 5 | 6 | 5.8 | ●$^2$ a. p. |
| 16 | 32.3 | 23.6 | 92 | 66 | 9 | 7 | ------ | |
| 17 | 32.5 | 23.2 | 94 | 75 | 5 | 6 | 21.1 | ●$^2$ a. |
| 18 | 33.4 | 22.7 | 93 | 58 | 5 | 4 | ------ | |
| 19 | 34.6 | 23.2 | 91 | 50 | 4 | 5 | ------ | |
| 20 | 32 | 22.7 | 94 | 83 | 4 | 7 | ------ | |
| 21 | 33 | 23 | 92 | 66 | 4 | 6 | ------ | ⊤ p. |
| 22 | 33.9 | 22.8 | 95 | 66 | 5 | 6 | ------ | |
| 23 | 34.6 | 23 | 93 | 56 | 5 | 5 | ------ | |
| 24 | 34.8 | 23.3 | 91 | 56 | 4 | 4 | ------ | |
| 25 | 34.4 | 22.4 | 91 | 62 | 5 | 6 | ------ | |
| 26 | 33 | 23.1 | 93 | 68 | 3 | 6 | ------ | |
| 27 | 34 | 23.7 | 97 | 58 | 4 | 4 | .8 | d$^2$ a. |
| 28 | 35.3 | 24.2 | 92 | 66 | 5 | 6 | 1.3 | d a. p ⊤ p. |
| 29 | 34.2 | 23 | 95 | 61 | 7 | 6 | ------ | ⊤ p. |
| 30 | 34.3 | 24.4 | 94 | 66 | 4 | 7 | ------ | |
| 31 | 34.5 | 23.9 | 93 | 72 | 4 | 10 | 29.2 | ●$^2$ ☈$^2$ p. |
| Mean | 33.3 | 22.9 | 93.7 | 65.6 | 4.9 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 89.4 | |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.9 | 19.6 | 98 | 88 | 2 | 6 | 3 | ●° a. |
| 2 | 30.7 | 21.6 | 98 | 68 | 8 | 8 | ------ | d a. |
| 3 | 31.4 | 21.5 | 98 | 68 | 8 | 2 | ------ | Ω ≡ a. |
| 4 | 31.2 | 21.6 | 98 | 76 | 6 | 9 | 1 | ●° p. |
| 5 | 29.7 | 22 | 97 | 71 | 8 | 6 | ------ | d p. |
| 6 | 29.9 | 21.8 | 97 | 79 | 2 | 8 | 17.8 | ●$^2$ ☈° p. |
| 7 | 28.5 | 20.2 | 98 | 75 | 2 | 8 | ------ | Ω ≡ d a. ⊤ p. |
| 8 | 31.6 | 21.6 | 98 | 63 | 5 | 8 | 42.2 | ●$^2$ ⊤$^2$ p. |
| 9 | 32 | 20 | 98 | 73 | 7 | 9 | 22.4 | ●$^2$ a. |
| 10 | 28.8 | 21.1 | 98 | 73 | 2 | 8 | 26.9 | ≡ a. ☈ ●$^2$ p. |
| 11 | 29.6 | 21 | 98 | 73 | 8 | 8 | ------ | Ω ≡ d a. ⊤ p. |
| 12 | 32.2 | 22.1? | 98 | 62 | 7 | 8 | ------ | |
| 13 | 31.4 | 21.3 | 96 | 74 | 7 | 9 | 4.6 | ≡° a. ● ⊤ p. |
| 14 | 30.9 | 22.2 | 98 | 65 | 4 | 9 | 13 | ☈° ●$^2$ p. |
| 15 | 30 | 20.4 | 98 | 65 | 2 | 6 | ------ | |
| 16 | 30.7 | 20.1 | 97 | 64 | 8 | 9 | 5.1 | ⊤° ●° p. |
| 17 | 30.5 | 20.5 | 98 | 64 | 2 | 7 | 18.8 | Ω ≡ a. ●° p. |
| 18 | 30 | 21.3 | 98 | 67 | 5 | 8 | ------ | |
| 19 | 30.4 | 20.4 | 98 | 67 | 2 | 6 | ------ | d a. |
| 20 | 30.9 | 20 | 98 | 64 | 7 | 9 | 3.3 | ☈° a. p. ●° p. |
| 21 | 30.1 | 20.3 | 98 | 70 | 2 | 7 | ------ | |
| 22 | 32.2 | 20.7 | 98 | 63 | 5 | 6 | 39.9 | ⊤° ●$^2$ p. |
| 23 | 31.6 | 21 | 97 | 63 | 2 | 8 | ------ | ⊤° a. |
| 24 | 32 | 21.3 | 98 | 62 | 7 | 6 | ------ | |
| 25 | 32.5 | 21 | 97 | 63 | 4 | 8 | ------ | ☈° d p. |
| 26 | 32.3 | 21.7 | 98 | 61 | 9 | 6 | 8.4 | ● p. |
| 27 | 32.2 | 21.9 | 98 | 65 | 7 | 9 | 16.8 | ☈° d ●$^2$ p. |
| 28 | 31.4 | 20.5 | 98 | 64 | 2 | 8 | 20.1 | ●$^2$ p. |
| 29 | 30 | 20.1 | 97 | 68 | 3 | 5 | ------ | Ω ≡ a. |
| 30 | 31.1 | 21 | 98 | 63 | 7 | 9 | 3.3 | ☈° ● a. |
| 31 | 30.3 | 21.3 | 98 | 67 | 8 | 7 | ------ | Ω ≡ a. |
| Mean | 30.9 | 21 | 97.7 | 68 | 5.1 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 246.6 | |

### SANTA CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.6 | 22.7 | 97 | 78 | 3 | 9 | 2 | Ω ●° ⊤ a. d ↯ p. |
| 2 | 31 | 22.9 | 94 | 62 | 6 | 8 | ------ | Ω° a. ⊂ p ↯ p. |
| 3 | 32.9 | 22.9 | 96 | 64 | 8 | 4 | ------ | Ω° ○ a. d ↯ p |
| 4 | 32.5 | 22.7 | 97 | 79 | 8 | 9 | 1.3 | ○ ⊤ ●° a. ⊎ ↯ p. |
| 5 | 30.9 | 22.8 | 98 | 86 | 5 | 9 | 34 | ●$^2$ ⌒ a. ● ⊤ ↯ p. |
| 6 | 31.8 | 23 | 97 | 84 | 9 | 9 | 26.4 | ● a. p. ☈ p. |
| 7 | 30.3 | 22.2 | 96 | 97 | 9 | 10 | 25.7 | ⊤ a. ● ☈ p. |
| 8 | 32.2 | 21.7 | 97 | 58 | 4 | 5 | ------ | ⊤ a ☈ ⊎ ⌒ p. |
| 9 | 33.4 | 21.6 | 97 | 61 | 6 | 7 | .5 | ⊤ a. p. d ↯ ⊕ p. |
| 10 | 33 | 21.9 | 97 | 69 | 4 | 9 | 19.8 | ●° a. ☈$^2$ d ● p. |
| 11 | 33.4 | 21.3 | 97 | 64 | 3 | 8 | .3 | ⊤ a. ☈ ⊕ p p. |
| 12 | 33.9 | 23.3 | 96 | 64 | 8 | 7 | ------ | Ω a. ⊕ ⊎ ↯ p. |
| 13 | 33.5 | 22.6 | 94 | 62 | 8 | 7 | ------ | Ω ○ a. ⊕ ☈ p. |
| 14 | 32.9 | 20 | 97 | 57 | 8 | 4 | ------ | Ω ○ a. ⊤ ⊕ ↯ p. |
| 15 | 33.7 | 22 | 98 | 56 | 6 | 4 | 3.8 | p ⊤ a. ☈ ●° p. |
| 16 | 33.4 | 23.1 | 96 | 73 | 9 | 9 | ------ | d ○ a. ⊤ d ⌒ ↯ |
| 17 | ------ | 22.9 | 96 | 62 | 4 | 7 | ------ | Ω$^2$ ≡° a. ⊤ ↯ p. |
| 18 | 33.7 | 21.8 | 98 | 66 | 8 | 8 | ------ | Ω a. ↯ p. |
| 19 | 33.7 | 22.4 | 99 | 72 | 3 | 7 | ------ | Ω a. ⊤ ↯ p. |
| 20 | 34 | 21.6 | 93 | 88 | 1 | 9 | 12.5 | Ω a. ● ☈ d p. |
| 21 | 33.9 | 22.6 | 98 | 77 | 2 | 8 | 22.9 | Ω ∞ a. ●$^2$ ☈ p. |
| 22 | 33.3 | 22.6 | 98 | 56 | 7 | 4 | ------ | ⊤ ↯ p. |
| 23 | 33.9 | 22.8 | 97 | 59 | 9 | 8 | ------ | Ω a. ⊤ ↯ ⊕ p. |
| 24 | 34.9 | 21.6 | 98 | 62 | 7 | 6 | ------ | Ω$^2$ a. ⊤ ↯ p. |
| 25 | 34.4 | 21.8 | 97 | 58 | 8 | 4 | ------ | Ω$^2$ a. ☈ p. |
| 26 | 34 | 22.1 | 97 | 66 | 9 | 9 | ------ | Ω ∞ a. ☈ p. |
| 27 | 34 | 22.5 | 97 | 75 | 8 | 9 | 1.5 | Ω a. p. ●° ↯ p. |
| 28 | 34.4 | 23.1 | 97 | 75 | 6 | 8 | ------ | p ☈ p. |
| 29 | 34.4 | 21.3 | 98 | 60 | 7 | 4 | ------ | Ω a. ⊤ ↯ p. |
| 30 | 34.2 | 23.2 | 97 | 64 | 8 | 7 | ------ | Ω ≡ a. ☈ ⌒ p. |
| 31 | 34.4 | 23.5 | 96 | 59 | 7 | 8 | 7.6 | d ⊤ a. ● ☈ p. |
| Mean | 33.3 | 22.3 | 96.8 | 68.2 | 6.4 | 7.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 158.3 | |

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.7 | 22.1 | 94 | 92 | 7 | 9 | 15.2 | ● ☈ a. p. |
| 2 | 32.3 | 23 | 97 | 61 | 8 | 6 | .3 | |
| 3 | 32.6 | 22.3 | 71 | 53 | 7 | 5 | ------ | Ω a. |
| 4 | 32.4 | 21.5 | 79 | 81 | 3 | 10 | 3.1 | Ω ●$^c$ a. |
| 5 | 32.7 | 22.2 | 92 | 56 | 7 | 7 | .3 | ⌒ a. |
| 6 | 31.1 | 21.8 | 97 | 71 | 4 | 8 | ------ | Ω° a. |
| 7 | 31.1 | 21.9 | 95 | 92 | 7 | 10 | 68.6 | ●$^2$ a. p. ☈ p. |
| 8 | 32.1 | 20.5 | 97 | 56 | 4 | 4 | ------ | ○ p. |
| 9 | 33.4 | 22.1 | 98 | 53 | 5 | 5 | 3.8 | |
| 10 | 32.8 | 22.9 | ------ | 59 | 4 | 8 | ------ | |
| 11 | 32.9 | 21.3 | 88 | 66 | 3 | 7 | ------ | Ω$^2$ a. ⊕ p. |
| 12 | 32.5 | 21.8 | 90 | 64 | 6 | 8 | 27.2 | Ω° a. ●$^2$ ☈ p. |
| 13 | 32.7 | 22 | 97 | 66 | 4 | 7 | ------ | Ω$^2$ a. ☈ p. |
| 14 | 33.7 | 23 | 85 | 59 | 4 | 5 | ------ | ↯ p. |
| 15 | 34 | 22.2 | 92 | 57 | 5 | 6 | 2 | ☈ p. |
| 16 | 30.8 | 22.2 | 97 | 88 | 8 | 9 | 3.1 | ●° p. |
| 17 | 32.7 | 21.6 | 85 | 72 | 6 | 7 | ------ | ↯ p. |
| 18 | 33.1 | 22.9 | 94 | 67 | 5 | 4 | ------ | Ω$^2$ a. |
| 19 | 33.9 | 22.2 | 85 | 63 | 3 | 4 | ------ | Ω$^2$ a. |
| 20 | 33.3 | 22.3 | 75 | 55 | 3 | 7 | ------ | Ω° a. |
| 21 | 32.9 | 22.4 | 89 | 65 | 3 | 7 | ------ | Ω$^c$ a. ☈ p. |
| 22 | 34.3 | 22.6 | 94 | 64 | 4 | 6 | ------ | Ω$^2$ a. ↯ p. |
| 23 | 34.1 | 22.9 | 92 | 71 | 7 | 7 | ------ | Ω° a. |
| 24 | 34.2 | 22.5 | 89 | 60 | 4 | 4 | ------ | Ω$^2$ a. |
| 25 | 34.4 | 23 | 92 | 61 | 6 | 4 | ------ | Ω° a. ☈ p. |
| 26 | 34.6 | 23 | 92 | 65 | 4 | 8 | ------ | Ω° a. ☈ p. |
| 27 | 34.1 | 23.5 | 94 | 66 | 4 | 7 | ------ | Ω° a. |
| 28 | 34.9 | 22.8 | 87 | 41 | 4 | 7 | ------ | Ω° a. |
| 29 | 34.2 | 23.6 | 94 | 60 | 5 | 4 | ------ | Ω° a. |
| 30 | 33.6 | 23 | 93 | 44 | 6 | 4 | ------ | Ω° a. ●° ☈ p. |
| 31 | 33.4 | 23 | 95 | 66 | 7 | 7 | 5.6 | ● p. |
| Mean | 33 | 22.4 | 90.6 | 64.3 | 5.1 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 129.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### IBA.

[$\phi=15° 20'$ N; $\lambda=119° 58'$ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.7 | 23 | 93 | 68 | 5 | 6 | ------ | ⛈ p. |
| 2 | 31.9 | 23.4 | 96 | 69 | 3 | 8 | ------ | d ⚡ p. |
| 3 | 32 | 22 | 92 | 61 | 4 | 3 | ------ | ⊕° ⚡ p. |
| 4 | 32.2 | 21.5 | 92 | 59 | 2 | 10 | ------ | Ω a. |
| 5 | 33 | 23.1 | 88 | 66 | 8 | 9 | 5.4 | ⛈ ● p. |
| 6 | 32.9 | 21.7 | 97 | 70 | 6 | 8 | 107.4 | ⛈² ●² d p. |
| 7 | 31 | 21.5 | 95 | 94 | 10 | 10 | 37.4 | ● ⛈ ⊍° p. |
| 8 | 30.4 | 20.7 | 97 | 71 | 8 | 4 | ------ | d ⌒ ◯ a. ◯ ⊍ p. |
| 9 | 31 | 21.6 | 90 | 72 | 7 | 6 | ------ | ⌒ a. ⊤ ⊍ p. |
| 10 | 31.5 | 21.7 | 94 | 72 | 9 | 8 | ------ | ⊤ a. p. ⛈ p. |
| 11 | 31.5 | 22.5 | 96 | 83 | 10 | 10 | .5 | ⛈ a. p. d° ⊍° p. |
| 12 | 32.4 | 22.1 | 91 | 76 | 5 | 10 | ------ | ⛈ d ⊍° p. |
| 13 | 32.3 | 22 | 96 | 68 | 8 | 6 | ------ | ⛈² d p. |
| 14 | 32.3 | 22.6 | 96 | 73 | 8 | 9 | 14 | ⛈ ● p. |
| 15 | 32.2 | 22.1 | 95 | 68 | 10 | 10 | 21 | ⊤ ● ⚡ p. |
| 16 | 32.3 | 22.9 | 91 | 70 | 10 | 10 | ------ | ⊤ ⚡ p. |
| 17 | 32 | 22.1 | 95 | 70 | 10 | 10 | 30.7 | Ω a. ⛈² ● p. |
| 18 | 31.5 | 23 | 91 | 71 | 10 | 10 | 18.2 | ⊤ ● ⚡ p. |
| 19 | 32 | 23.3 | 92 | 67 | 4 | 10 | ------ | ◯° a. p. ⊤ ⚡ p. |
| 20 | 32.4 | 23 | 94 | 66 | 6 | 4 | ------ | Ω ⊕ a. ⊤ ⚡ p. |
| 21 | 31.9 | 23 | 84 | 74 | 10 | 8 | ------ | Ω a. ⊤° ⚡ p. |
| 22 | 32.7 | 22.4 | 97 | 70 | 5 | 9 | 7.6 | Ω a. ⛈ ● ⊍ p. |
| 23 | 32.5 | 23.4 | 97 | 68 | 10 | 8 | ------ | ⊤ ⚡ p. |
| 24 | 32.8 | 23.4 | 93 | 61 | 6 | 4 | ------ | Ω a. ⛈° p. |
| 25 | 32.5 | 22.7 | 97 | 64 | 10 | 3 | ------ | Ω a. ⊤ ⚡ p. |
| 26 | 32.5 | 23.3 | 97 | 69 | 10 | 6 | ------ | Ω° ⊤° a. ⊤ ⚡ p. |
| 27 | 33 | 23.5 | 95 | 70 | 10 | 9 | ------ | ⛈° p. |
| 28 | 33 | 22.9 | 91 | 72 | 10 | 10 | ------ | ⊤° d ⚡ p. |
| 29 | 32.7 | 23.3 | 92 | 68 | 10 | 10 | ------ | ◯° ⚡ p. |
| 30 | 32.7 | 23.5 | 95 | 74 | 7 | 10 | ------ | ⊤ a. p. ⚡ p. |
| 31 | 33 | 23.1 | 94 | 67 | 10 | 10 | ------ | ⊤ d ⚡ p. |
| Mean | 32.2 | 22.6 | 93.6 | 70 | 7.8 | 8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 242.2 | |

### TARLAC.

[$\phi=15° 30'$ N; $\lambda=120° 35'$ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 35.5 | 23 | 93 | 39 | 3 | 9 | ------ | Ω a. ⚡ p. |
| 2 | 36.2 | 23.3 | 96 | 39 | 3 | 10 | ------ | Ω a. |
| 3 | 34.1 | 22 | 95 | 45 | 2 | 2 | ------ | Ω a. |
| 4 | 34.4 | 22.5 | 84 | 49 | 3 | 3 | ------ | Ω a. |
| 5 | 33.6 | 21.7 | 93 | 48 | 4 | 9 | ------ | Ω a. ⚡ p. |
| 6 | 34 | 22 | 95 | 48 | 3 | 8 | ------ | Ω a. |
| 7 | 33.2 | 22.2 | 95 | 47 | 2 | 4 | ------ | Ω a. |
| 8 | 33.2 | 21.9 | 95 | 55 | 3 | 3 | 1 | Ω a. d p. |
| 9 | 34 | 22.4 | 96 | 47 | 3 | 9 | ------ | Ω a. d° ⚡ p. |
| 10 | 35.2 | 22.5 | 95 | 47 | 7 | 8 | ------ | Ω a. ⊤ p. |
| 11 | 35.6 | 22.2 | 94 | 32 | 8 | 6 | 6.4 | ⊤ ● p. |
| 12 | 35.4 | 23.2 | 88 | 48 | 7 | 6 | 3.8 | ● ⚡ p. |
| 13 | 34.2 | 22.8 | 96 | 51 | 8 | 7 | ------ | d p. |
| 14 | 35.8 | 22.1 | 94 | 48 | 9 | 6 | 1.5 | d p. |
| 15 | 35.6 | 22.5 | 96 | 48 | 4 | 7 | 1.3 | d ⚡ p. |
| 16 | 33 | 22.8 | 96 | 58 | 4 | 8 | ------ | Ω a. |
| 17 | 34.7 | 22.1 | 94 | 48 | 3 | 3 | ------ | Ω a. ⛈ p. |
| 18 | 35 | 22.6 | 96 | 50 | 9 | 9 | 1 | Ω ≡° a. ⛈ d p. |
| 19 | 34.5 | 22.5 | 97 | 54 | 2 | 7 | ------ | Ω ≡ a. |
| 20 | 34.8 | 22.4 | 96 | 50 | 2 | 4 | ------ | Ω a. |
| 21 | 35.9 | 23.3 | 97 | 52 | 8 | 7 | ------ | Ω a. |
| 22 | 36 | 23 | 95 | 48 | 2 | 7 | 1.3 | Ω a. d p. |
| 23 | 37 | 22.6 | 94 | 51 | 3 | 8 | 12.7 | Ω a. ● p. |
| 24 | 34.5 | 23.6 | 94 | 51 | 5 | 5 | ------ | |
| 25 | 35.6 | 23.4 | 89 | 50 | 6 | 7 | ------ | Ω a. |
| 26 | 36.6 | 23 | 93 | 53 | 7 | 8 | 1.8 | Ω a. ● p. |
| 27 | 36.2 | 23.5 | 96 | 56 | 6 | 6 | .8 | Ω a. d p. |
| 28 | 36.2 | 22.5 | 96 | 54 | 3 | 8 | 2.3 | Ω a. ● p. |
| 29 | 35.6 | 24.2 | 96 | 54 | 7 | 8 | 14 | ● a. p. |
| 30 | 36.3 | 23 | 95 | 47 | 6 | 8 | ------ | Ω a. |
| 31 | 36 | 22 | 95 | 86 | 6 | 8 | 6.6 | Ω a. ⊤ ● p. |
| Mean | 35.1 | 22.7 | 94.3 | 50.1 | 4.8 | 6.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 54.5 | |

### BALER.

[$\phi=15° 40'$ N; $\lambda=121° 34'$ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | 24 | 96 | 71 | 10 | 8 | 7.1 | d a. ● p. |
| 2 | ------ | 23.9 | 95 | 69 | 10 | 5 | ------ | Ω ≡° a. |
| 3 | ------ | 24.1 | 89 | 65 | 10 | 1 | ------ | |
| 4 | ------ | 22.5 | 94 | 65 | 5 | 2 | 11.7 | Ω ≡° a. ● p. |
| 5 | ------ | 23.4 | 95 | 74 | 7 | 1 | ------ | Ω ≡° a. |
| 6 | 35.8 | 22.5 | 93 | 74 | 10 | 1 | .5 | ● p. |
| 7 | 31.8 | 23.6 | 94 | 68 | 10 | 8 | 1.3 | d ⌒ a. |
| 8 | 30.1 | 23 | 95 | 87 | 10 | 10 | 6.9 | ● a. d² ● ⚡ p. |
| 9 | 32.5 | 22.1 | 96 | 79 | 10 | 9 | 2.8 | ⊤ ● p. |
| 10 | 31.3 | 22.1 | 94 | 72 | 8 | 6 | ------ | Ω ≡° a. ⊤ p. |
| 11 | 32.2 | 23.1 | 95 | 72 | 10 | 9 | 39.9 | Ω a. ⊕ ⊤ ● ⚡ p. |
| 12 | 30.9 | 23.4 | 97 | 75 | 10 | 2 | ------ | Ω ≡ a. ⌽ p. |
| 13 | 31.7 | 23.2 | 95 | 75 | 10 | 5 | ------ | |
| 14 | 31.7 | 22.7 | 94 | 68 | 10 | 1 | ------ | ⊤ ⌽ p. |
| 15 | 32 | 23.2 | 93 | 70 | 9 | 1 | ------ | |
| 16 | 30.4 | 23.2 | 93 | 74 | 10 | 10 | 5.8 | ⊤ ● a. |
| 17 | 33.1 | 21.4 | 96 | 50 | 7 | 1 | ------ | |
| 18 | 32.3 | 22.3 | 93 | 68 | 10 | 9 | ------ | Ω² a. |
| 19 | 32 | 22.4 | 94 | 67 | 10 | 1 | ------ | |
| 20 | 32.2 | 22.2 | 92 | 66 | 1 | 2 | ------ | Ω² a. |
| 21 | 34.5 | 22.9 | 94 | 55 | 9 | 6 | .8 | ⊤ ● ⚡ p. |
| 22 | 33.1 | 24.4 | 96 | 62 | 10 | 2 | ------ | Ω ≡° a. ⚡ p. |
| 23 | 33.5 | 23.5 | 94 | 65 | 10 | 5 | 2.5 | ● p. |
| 24 | 33.6 | 23.6 | 95 | 53 | 10 | 1 | ------ | Ω° ≡° a. |
| 25 | 34.8 | 22.8 | 92 | 57 | 10 | 1 | ------ | ⛈ p. |
| 26 | 35.1 | 23.5 | 92 | 58 | 10 | 2 | 12.7 | ● ⛈ p. |
| 27 | 32.6 | 22.5 | 93 | 47 | 10 | 1 | 1.3 | Ω a. ⊤ p. |
| 28 | 32 | 23.8 | 94 | 70 | 10 | 1 | ------ | ● a |
| 29 | 34.5 | 23.8 | 94 | 63 | 10 | 2 | ------ | Ω° a. ⚡ p. |
| 30 | 35.1 | 23.2 | 91 | 67 | 10 | 7 | 5.8 | ⊤ d² ⛈ p. |
| 31 | 32.6 | 24.8 | 96 | 72 | 10 | 8 | 33.3 | ● a. p. ⛈ p. |
| Mean | 32.7 | 23.1 | 94 | 67 | 9.2 | 4.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 132.4 | |

### SAN FERNANDO, UNION.

[$\phi=16° 37'$ N; $\lambda=120° 19'$ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.8 | 23 | 82 | 64 | 1 | 1 | ------ | |
| 2 | 32.4 | 24.4 | 74 | 63 | 1 | 2 | ------ | |
| 3 | 33.4 | 23.2 | 77 | 63 | 2 | 10 | ------ | |
| 4 | 33 | 23.9 | 77 | 63 | 1 | 3 | ------ | |
| 5 | 34.5 | 23.3 | 86 | 59 | 2 | 4 | ------ | |
| 6 | 34.9 | 23.9 | 80 | 60 | 1 | 2 | 51.3 | ⚡ ●² ⛈² p. |
| 7 | 32.3 | 22.2 | 94 | 68 | 6 | 6 | 5.6 | ⊤ p. |
| 8 | 31.7 | 22.7 | 86 | 69 | 9 | 3 | .3 | ● ⊤ a. d p. |
| 9 | 32.7 | 23.7 | 87 | 63 | 6 | 3 | .3 | ⚡ ●° p. |
| 10 | 31.9 | 22.9 | 94 | 66 | 6 | 3 | ------ | ⊤ p. |
| 11 | 32.6 | 23.4 | 91 | 70 | 3 | 6 | ------ | ⊤ ⊍ p. |
| 12 | 32.4 | 22.4 | 91 | 64 | 3 | 5 | .3 | ⌒ d p. |
| 13 | 32.7 | 22.4 | 93 | 64 | 3 | 4 | .5 | ⊤ a. d p. |
| 14 | 33.1 | 23.4 | 95 | 65 | 2 | 6 | ------ | ≡° a. ⊤ a. p. |
| 15 | 33.2 | 23.7 | 93 | 65 | 2 | 3 | ------ | |
| 16 | 34.9 | 24.7 | 84 | 53 | 7 | 3 | .8 | ⛈² ●° p. |
| 17 | 33.7 | 22.8 | 94 | 60 | 3 | 6 | .5 | ◯° d ⚡ p. |
| 18 | 32.6 | 22.7 | 93 | 59 | 2 | 3 | .5 | d p. |
| 19 | 33.4 | 23.2 | 91 | 61 | 6 | 8 | ------ | p a. ⊤ p. |
| 20 | 34.4 | 23.4 | 90 | 50 | 1 | 2 | ------ | ⊤ p. |
| 21 | 34.4 | 23.5 | 92 | 58 | 3 | 4 | ------ | ⊤° a. |
| 22 | 33.4 | 24 | 91 | 68 | 6 | 6 | ------ | ⊤ ⛈ p. |
| 23 | 32.9 | 24.4 | 90 | 69 | 3 | 4 | ------ | ⊤ p. |
| 24 | 34.7 | 23.8 | 90 | 55 | 1 | 3 | ------ | ⛈ p. |
| 25 | 34.4 | 23.4 | 92 | 58 | 3 | 3 | ------ | ⚡ p. |
| 26 | 33.9 | 23.8 | 92 | 60 | 3 | 3 | ------ | |
| 27 | 34.4 | 24.4 | 91 | 60 | 4 | 3 | ------ | ⊤ p. |
| 28 | 34.6 | 23.5 | 85 | 58 | 2 | 7 | ------ | ⊤ p. |
| 29 | 34.6 | 25.9 | 82 | 56 | 4 | 5 | ------ | ⊤ p. |
| 30 | 34.1 | 24.7 | 88 | 61 | 4 | 6 | .3 | ⊤ d° p. |
| 31 | 33.5 | 23.7 | 91 | 62 | 3 | 4 | 4.3 | ⛈ ● p. |
| Mean | 33.5 | 23.6 | 88.3 | 61.7 | 3.3 | 4.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 64.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.3 | 22.8 | 98 | 56 | 10 | 2 | ------ | ≡ a. ☈° p. |
| 2 | 32.8 | 23.4 | 97 | 59 | 7 | 3 | ------ | ϟ° p. |
| 3 | 33.4 | 21.6 | 98 | 55 | 3 | 1 | ------ | Ω$^2$ a. |
| 4 | 33.6 | 21.2 | 97 | 51 | 1 | 3 | ------ | Ω$^2$ a. |
| 5 | 34.7 | 21.7 | 97 | 51 | 4 | 3 | ------ | Ω$^2$ a. ϟ° p. |
| 6 | 34.9 | 21.8 | 97 | 51 | 2 | 3 | ------ | Ω$^2$a.⌒°ϟ°⊍$^2$ p. |
| 7 | 34.4 | 21.8 | 97 | 53 | 5 | 7 | ------ | ○°⌒°⊤°d°ϟ°p. |
| 8 | 34.8 | 22 | 97 | 53 | 2 | 8 | 12.4 | Ω$^2$ a. ● ☈° p. |
| 9 | 33.6 | 22.4 | 97 | 59 | 10 | 7 | 22.1 | ⊤° a. ☈° d$^2$ p. |
| 10 | 33.3 | 22.2 | 97 | 62 | 9 | 3 | 2.5 | ○°⊤°a. ⊤°d$^2$ϟp. |
| 11 | 33.2 | 22.6 | 97 | 63 | 9 | 7 | 10.2 | ●° ☈$^2$ p. |
| 12 | 32.8 | 22.1 | 97 | 61 | 8 | 6 | ------ | ⊕°⊤°a.○°☈°p. |
| 13 | 33.9 | 23.8 | 97 | 56 | 9 | 6 | ------ | Ω°⊤°a. ⊤° ⊖$^2$p. |
| 14 | 34.7 | 22.5 | 97 | 55 | 7 | 3 | 7.6 | Ω$^2$ a.☈°d$^2$●°p. |
| 15 | 34.7 | 23.1 | 97 | 55 | 3 | 5 | 17.5 | ⊤° a. ☈° ●$^2$ p. |
| 16 | 33.8 | 23.3 | 97 | 59 | 9 | 5 | ------ | ○$^2$ a. ⊤° d° ϟ° p. |
| 17 | 35 | 21.9 | 96 | 55 | 5 | 3 | .5 | Ω$^2$ a. ☈° d$^2$ p. |
| 18 | 33.7 | 23.1 | 97 | 56 | 9 | 7 | ------ | ○° a. p. ☈° p. |
| 19 | 34.9 | 21.9 | 97 | 56 | 3 | 6 | ------ | ⊤° ϟ° p. |
| 20 | 34.1 | 22.4 | 97 | 55 | 1 | 2 | ------ | ϟ° p. |
| 21 | 35.1 | 22.8 | 96 | 54 | 4 | 6 | 14.5 | Ω$^2$☈°a.☈°●$^2$p. |
| 22 | 34.8 | 23 | 97 | 56 | 3 | 4 | 1.3 | ⊤° a. ☈° d$^2$ p. |
| 23 | 34.6 | 22.3 | 97 | 55 | 8 | 6 | ------ | ⊤○°a.○°☈°p. |
| 24 | 36 | 23.6 | 97 | 51 | 3 | 4 | ------ | Ω$^2$ a. ☈° p. |
| 25 | 35.7 | 21.8 | 96 | 50 | 3 | 4 | ------ | Ω$^2$ a. ☈° p. |
| 26 | 35.5 | 22.8 | 97 | 49 | 4 | 4 | 7.4 | Ω° a. ☈° ●° p. |
| 27 | 35 | 23 | 97 | 56 | 9 | 4 | .3 | ⌒° ☈° d$^2$ p. |
| 28 | 35.4 | 22.1 | 98 | 54 | 6 | 7 | ------ | ≡[illegible]°a.○°⊤°ϟ°p. |
| 29 | 36.4 | 24.2 | 97 | 50 | 8 | 7 | 55.4 | ○[illegible]a.⌒°●$^2$☈°p. |
| 30 | 36 | 22.3 | 98 | 53 | 10 | 8 | 13.5 | ⊤°a.○° ☈●$^2$ p. |
| 31 | 32.7 | 22 | 98 | 64 | 10 | 8 | 1.8 | ≡a. ○°d$^2$ ⊤°p. |
| Mean | 34.4 | 22.5 | 97.1 | 55.3 | 5.9 | 4.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 167 | |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.6 | 24 | 85 | 78 | 1 | 3 | ------ | Ω$^2$ a.⊤° ⌒° ϟ p. |
| 2 | 32.2 | 25.5 | 88 | 68 | 4 | 2 | ------ | Ω a. |
| 3 | 31.8 | 25.5 | 82 | 72 | 7 | 4 | ------ | ϟ p. |
| 4 | 32.2 | 25 | 85 | 71 | 0 | 2 | ------ | Ω a. |
| 5 | 32.6 | 25.2 | 88 | 74 | 9 | 6 | 1.3 | Ω a. ⊤° ⌒° p p. |
| 6 | 32.1 | 24.5 | 88 | 70 | 5 | 1 | ------ | ☈° d p. |
| 7 | 31.3 | 25.2 | 88 | 71 | 4 | 9 | 98.3 | Ω a. ●$^2$ ☈ p. |
| 8 | 30.4 | 23.6 | 91 | 75 | 5 | 4 | ------ | ⌒° a. d p. |
| 9 | 30.8 | 25 | 92 | 79 | 10 | 8 | 38.9 | ⊤° d a. ● ☈ p. |
| 10 | 30.7 | 23.8 | 91 | 78 | 7 | 4 | ------ | |
| 11 | 31.1 | 23.7 | 96 | 75 | 3 | 4 | ------ | Ω$^2$ ≡° a. ⊤° a. p. |
| 12 | 31.6 | 23.6 | 91 | 78 | 3 | 4 | ------ | Ω$^2$ a. ⊤° d ϟ p. |
| 13 | 31.5 | 24 | 91 | 75 | 7 | 3 | ------ | Ω a. ⊤° ϟ p. |
| 14 | 31.7 | 25.4 | 91 | 73 | 2 | 5 | ------ | Ω a. ⊤° ϟ p. |
| 15 | 32.1 | 24.8 | 88 | 73 | 2 | 4 | ------ | Ω a. ⊤° ⌒ p. |
| 16 | 32.2 | 25.5 | 89 | 72 | 8 | 7 | ------ | Ω a. ⊤° p. |
| 17 | 31.8 | 25.4 | 88 | 72 | 2 | 8 | ------ | Ω a. ⊤° ϟ p. |
| 18 | 31.8 | 24.5 | 91 | 78 | 4 | 4 | ------ | ⊤° a. p. ϟ p. |
| 19 | 32.2 | 24.5 | 91 | 67 | 8 | 9 | ------ | ⊤° p. |
| 20 | 32.5 | 25 | 91 | 70 | 3 | 2 | ------ | Ω a. ϟ p. |
| 21 | 32.8 | 25.1 | 90 | 74 | 3 | 5 | ------ | Ω a. ⊤° a. p. ϟ p. |
| 22 | 32.8 | 26 | 84 | 75 | 7 | 3 | ------ | ⊤° a. ☈ p. |
| 23 | 32.9 | 26.1 | 88 | 68 | 8 | 7 | ------ | ⊤° ϟ p. |
| 24 | 32.6 | 25 | 89 | 74 | 3 | 1 | 6.4 | Ω a. ⊤° ● ϟ p. |
| 25 | 32.4 | 24.8 | 93 | 74 | 2 | 3 | ------ | ϟ p. |
| 26 | 32.5 | 25.5 | 92 | 76 | 4 | 3 | ------ | Ω a. ϟ p. |
| 27 | 32.9 | 25.9 | 93 | 76 | 7 | 3 | ------ | Ω a. ☈ d° p. |
| 28 | 32.8 | 25.5 | 83 | 59 | 8 | 9 | ------ | ⊤° a. p. ϟ p. |
| 29 | 32.7 | 26.5 | 82 | 61 | 10 | 5 | 4.3 | ⊤° a. ☈° p p. |
| 30 | 32.7 | 26 | 84 | 69 | 8 | 7 | ------ | p a. ⊤ ⌒° d ϟ p. |
| 31 | 32.8 | 25 | 85 | 66 | 4 | 5 | ------ | Ω a. ⊤ ⌒$^2$ d ϟ p. |
| Mean | 32.1 | 25 | 88.6 | 72.3 | 5.1 | 4.6 | ------ | |
| Total | ------ | ------ | ---- | ------ | ------ | ------ | 149.2 | |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.8 | 22.4 | 92 | 66 | 0 | 2 | ------ | Ω$^2$ a. |
| 2 | 33.8 | 23 | 85 | 53 | 0 | 1 | ------ | Ω a. |
| 3 | 34.4 | 22.2 | 79 | 62 | 0 | 1 | ------ | Ω a. |
| 4 | 34.1 | 23 | 88 | 60 | 0 | 1 | ------ | Ω a. |
| 5 | 34.2 | 23.9 | 86 | 63 | 0 | 2 | ------ | |
| 6 | 33.9 | 24.1 | 88 | 68 | 0 | 8 | ------ | Ω$^2$ a. ☈ d° p. |
| 7 | 33.8 | 25.2 | 91 | 70 | 3 | 10 | 4.6 | ☈ ● p. |
| 8 | 33.9 | 23 | 93 | 59 | 8 | 5 | 3.8 | ☈ ● p. |
| 9 | 33.8 | 23.4 | 91 | 63 | 6 | 7 | 40.6 | ● ☈ p. |
| 10 | 32.3 | 22.5 | 89 | 63 | 9 | 9 | ------ | |
| 11 | 32 | 23.3 | 92 | 67 | 0 | 6 | ------ | Ω$^2$ a. |
| 12 | 33.1 | 22.7 | 92 | 61 | 0 | 3 | ------ | Ω$^2$ a. ⊤ ⌒$^2$ p. |
| 13 | 33.5 | 23 | 92 | 65 | 0 | 4 | ------ | Ω$^2$ a. ⊤ d° p. |
| 14 | 33.2 | 23.6 | 90 | 58 | 0 | 4 | ------ | Ω$^2$ a. ⊤ d° p. |
| 15 | 33.4 | 22.9 | 90 | 61 | 0 | 4 | ------ | Ω a. |
| 16 | 34.2 | 23.5 | 91 | 57 | 3 | 5 | .8 | Ω$^2$ a. ●° ☈ p. |
| 17 | 34.8 | 23.2 | 86 | 58 | 0 | 4 | ------ | Ω a. ⊤ p. |
| 18 | 33.4 | 23.7 | 87 | 64 | 8 | 8 | ------ | ⊤ ϟ p. |
| 19 | 34.1 | 23.4 | 89 | 63 | 5 | 10 | ------ | |
| 20 | 33.8 | 23.1 | 91 | 60 | 0 | 4 | ------ | Ω a. |
| 21 | 34.3 | 24.3 | 86 | 58 | 0 | 5 | ------ | ☈ p. |
| 22 | 33.8 | 24.6 | 88 | 58 | 3 | 4 | ------ | ☈ p. |
| 23 | 34.2 | 23.9 | 87 | 58 | 1 | 4 | ------ | ⊤ p. |
| 24 | 33.8 | 24.2 | 79 | 59 | 0 | 5 | ------ | ☈ p. |
| 25 | 34.9 | 24 | 85 | 55 | 2 | 5 | ------ | |
| 26 | 34.8 | 24.3 | 84 | 59 | 1 | 4 | ------ | ⊤ p. |
| 27 | 34.7 | 24 | 89 | 58 | 2 | 4 | ------ | ⊤ p. |
| 28 | 35 | 24.2 | 85 | 54 | 3 | 3 | .5 | ⊤ d p. |
| 29 | 35.6 | 25.3 | 85 | 54 | 9 | 6 | ------ | ⊤ p. |
| 30 | 34.9 | 25.3 | 88 | 61 | 6 | 8 | 1.8 | ⊤ ●° p. |
| 31 | 35.2 | 24.5 | 91 | 59 | 0 | 3 | ----- | ⊤ p. |
| Mean | 34 | 23.7 | 88 | 60.5 | 2.2 | 4.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 52.1 | |

### SANTO DOMINGO.

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.4 | 22.2 | 84 | 69 | 6 | 2 | ------ | Ω° p. |
| 2 | 29.4 | 23.4 | 82 | 74 | 3 | 3 | ------ | Ω° p. |
| 3 | 29.3 | 22.9 | 78 | 70 | 1 | 4 | 7.1 | Ω° a. |
| 4 | 29.5 | 23.8 | 81 | 75 | 2 | 3 | ------ | ● v a. Ω° p. |
| 5 | 30.1 | 25.7 | 87 | 74 | 4 | 5 | ------ | Ω p. |
| 6 | 30.2 | 24.8 | 86 | 71 | 0 | 3 | ------ | Ω° a. |
| 7 | 30 | 24.4 | 83 | 68 | 5 | 3 | ------ | d° a. ⊍ p. |
| 8 | 30.2 | 25.3 | 80 | 85 | 9 | 10 | 13 | d° a. ● ☈ p. |
| 9 | 29.9 | 22.9 | 90 | 85 | 7 | 10 | 14 | v a. d ● p. |
| 10 | 30.1 | 23.3 | 91 | 90 | 9 | 10 | 4.5 | ● a. p. |
| 11 | 29.9 | 24.3 | 87 | 81 | 3 | 3 | .1 | d a. Ω° p. |
| 12 | 30 | 22.8 | 95 | 76 | 1 | 3 | ------ | v a. Ω p. |
| 13 | 30.4 | 22.8 | 93 | 75 | 4 | 3 | ------ | Ω v a. d° ⌒ Ω p. |
| 14 | 30.9 | 24.9 | 88 | 76 | 5 | 3 | ------ | ⊤° a. Ω p. |
| 15 | 30.9 | 23.3 | 92 | 78 | 1 | 7 | 8.1 | Ω a. ϟ ● p. |
| 16 | 29 | 24.4 | 88 | 86 | 8 | 5 | 5.5 | ● ⌒ a. ϟ p. |
| 17 | 31 | 23.8 | 97 | 81 | 5 | 5 | ------ | ●° a. ϟ° p. |
| 18 | 30.1 | 24.3 | 90 | 85 | 9 | 10 | 3.3 | d ϟ ● p. |
| 19 | 30.3 | 23.9 | 94 | 85 | 6 | 9 | .5 | ●° a. ϟ ⊤ p. |
| 20 | 31.9 | 26.3 | 90 | 74 | 1 | 4 | ------ | v a. ϟ Ω p. |
| 21 | 30.5 | 25.1 | 92 | 84 | 4 | 7 | .5 | Ω a. ϟ p. |
| 22 | 30.2 | 24.6 | 92 | 82 | 10 | 7 | ------ | d a. ϟ ⊤° p. |
| 23 | 30.1 | 24.2 | 92 | 90 | 5 | 9 | 18 | ● ⊤° a. ϟ Ω p. |
| 24 | 30.4 | 23.6 | 93 | 80 | 1 | 1 | ------ | Ω v a. ϟ$^2$ Ω$^2$ p. |
| 25 | 31.4 | 24.6 | 87 | 72 | 8 | 7 | 13.9 | ● ⊤ ϟ p. |
| 26 | 30.1 | 24.3 | 89 | 86 | 8 | 10 | 13.1 | ⇙° ● a. ϟ ●° p. |
| 27 | 30.9 | 24.3 | 87 | 79 | 4 | 5 | ------ | v a. ϟ Ω p. |
| 28 | 32.5 | 23.3 | 87 | 78 | 5 | 5 | ------ | ϟ p. |
| 29 | 31.1 | 25.7 | 83 | 80 | 7 | 8 | ------ | ⊤ a. ϟ p. |
| 30 | 29.3 | 25.3 | 86 | 90 | 10 | 10 | 16.7 | ● a. p. ⊤ ϟ p. |
| 31 | 30.8 | 23.8 | 92 | 85 | 1 | 9 | ------ | ⊤ Ω p. |
| Mean | 30.3 | 24.1 | 88.3 | 79.5 | 4.9 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 118.3 | |

# SEISMOLOGICAL BULLETIN FOR MAY, 1911.

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By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

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## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, $17^{h}$ $13^{m}$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction ENE–WSW, intensity IV, duration 20 seconds. It stopped a wall-clock.

2, $2^{h}$ $35^{m}$ $6^{s}$.* **Baguio** (W of Luzon). Oscillatory earthquake. Direction NE–SW, intensity II.

3, $11^{h}$ $54^{m}$. **Vigan** (NW of Luzon). Earthquake of intensity II; only trepidatory or vertical movements were noticed.

5, $3^{h}$ $54^{m}$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction SE–NW, intensity III, duration 10 seconds.

8, $4^{h}$ $45^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

11, $1^{h}$ $57^{m}$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction E–W, intensity IV, duration 14 seconds.

12, $9^{h}$ $32^{m}$ $3^{s}$.* **Santo Domingo** (Batanes Islands). Oscillatory earthquake. Direction E–W, intensity III, duration 4 seconds.

13, $11^{h}$ $22^{m}$ $5^{s}$.* **Southwestern Luzon.** Earthquake of intensity IV, which was felt in the whole of southwestern Luzon, throughout a belt 400 kilometers in length and 100 kilometers in width, comprising the Provinces of Bataan, Zambales, Pangasinan, Pampanga, Tarlac, Rizal, Laguna, Cavite, and Batangas. Its epicenter lay in the China Sea, west of the southern extremity of the Zambales mountain range. The small intensity which this quake manifested in Luzon notwithstanding, it was registered in all the observatories of the Far East and of Europe.

18, $12^{h}$ $15^{m}$. **Guam** (Mariana Islands). Earthquake of intensity II.

18, $14^{h}$ $12^{m}$ $40^{s}$.* **Antipolo** (S of Luzon). Earthquake of intensity II. Its epicenter must be sought off the eastern coast of Luzon, in the neighborhood of Polillo Island, on which it doubtlessly developed greater force than at Antipolo, at a distance of some 70 kilometers.

18, $23^{h}$ $54^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

22, $11^{h}$ $10^{m}$. **Cuyo Island.** Oscillatory earthquake. Direction N–S, intensity III, duration 4 seconds.

22, $11^{h}$ $35^{m}$. **Santa Cruz, Laguna** (S of Luzon). Oscillatory earthquake. Direction NNE–SSW, intensity II.

23, $20^{h}$ $55^{m}$ $24^{s}$.* **Nueva Caceres** (SE of Luzon). Earthquake of intensity III.

26, $23^{h}$ $38^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

28, $17^{h}$ $47^{m}$ $34^{s}$.* **Zambales** (W of Luzon). Earthquake of intensity III, having its epicenter in the China Sea very close to the coast of Zambales.

28, $19^{h}$ $18^{m}$ $48^{s}$.* **Virac** (Catanduanes). Oscillatory earthquake. Direction NW–SE, intensity III, duration 4 seconds.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.$^h$)

| No. | Date. | Character. | Instrument and component. | | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 88 | 2 | $\mathrm{I}_d$ | V. | | 2 35 06 | ---------- | 2 35 14 | 2 35 33 | 0.03 | 2.4 | 2 39 | Vertical Component 0.01 mm. Earthquake, II at Baguio (West of Luzon). |
| 89 | 2 | $\mathrm{I}_d$ | W. | N | 21 53 34 | ---------- | 21 53 57 | 21 54 00 | .02 | 2.2 | 21 55 | |
| | | | V. | | 21 34 00 | ---------- | 21 38 15 | 21 41 04 | .01 | 8.8 | 22 01 | |
| | | | H. | NNW | 21 34 00 | ---------- | 21 38 02 | 21 41 01 | .08 | 7.5 | 22 02 | |
| 90 | 4 | $\mathrm{I}_r$ | H. | WSW | 21 33 59 | ---------- | 21 38 32 | 21 41 33 | .19 | 8.7 | 22 19 | |
| | | | W. | N | 21 34 16 | ---------- | 21 39 06 | 21 40 34 | .01 | 10.8 | 21 54 | |
| | | | W. | E | 21 34 18 | ---------- | 21 38 24 | 21 41 16 | .03 | 12.8 | 22 04 | |
| | | | V. | | 7 45 23 | 7 54 07 | 7 58 34 | 8 01 05 | .02 | 9.6 | 9 06 | Earthquake in Kamtschatka. |
| | | | H. | NNW | 7 45 23 | 7 54 12 | 7 59 22 | 8 02 07 | .17 | 9 | 9 20 | |
| 91 | 5 | $\mathrm{II}_u$ | H. | WSW | 7 45 23 | 7 54 05 | 7 59 54 | 8 04 32 | .29 | 8.4 | 9 58 | |
| | | | W. | N | 7 45 23 | 7 54 37 | 8 01 58 | 8 04 08 | .05 | 17.2 | 9 22 | |
| | | | W. | E | 7 45 23 | 7 54 49 | 8 00 41 | 8 04 00 | .06 | 8.8 | 9 15 | |
| 92 | 7 | $\mathrm{I}_d$ | V. | | 18 17 26 | ---------- | 18 17 37 | 18 17 44 | .03 | 2.4 | 18 19 | V. C. 0.01 mm. |
| 93 | 8 | $\mathrm{I}_d$ | V. | | 5 44 34 | ---------- | 5 44 46 | 5 45 18 | .18 | 2.4 | 5 50 | V. C. 0.09 mm. |
| 94 | 12 | $\mathrm{I}_v$ | H. | WSW | 9 32 03 | ---------- | 9 33 40 | 9 34 03 | .05 | 8.1 | 9 49 | Eqke., III at Santo Domingo (Batanes Islands). |
| | | | W. | N | 9 32 02 | ---------- | 9 33 24 | 9 33 31 | .01 | 5 | 9 45 | |
| 95 | 13 | $\mathrm{II}_v$ | V. | | 11 22 04 | ---------- | 11 22 12 | 11 23 17 | 2.40 | 2.4 | 11 58 | V. C. 2.50 mm. Eqke. in southwestern Luzon. |
| | | | W. | E | 11 22 05 | ---------- | 11 22 12 | 11 23 32 | 2.04 | 2.8 | 12 18 | |
| 96 | 14 | $\mathrm{I}_d$ | V. | | ---------- | ---------- | 20 54 37 | 20 54 49 | .02 | 2.4 | 20 57 | |
| | | | V. | | 0 45 42 | ---------- | ---------- | 0 46 22 | .04 | 2.4 | 0 50 | Origin in China not far from Canton. |
| 97 | 15 | $\mathrm{I}_r$ | H. | WSW | 0 45 44 | ---------- | ---------- | 0 46 32 | .02 | 8.7 | 1 04 | |
| | | | W. | N | 0 45 48 | ---------- | ---------- | 0 46 12 | .01 | 2.6 | 0 51 | |
| 98 | 15 | I | V. | | 1 38 23 | ---------- | 1 39 21 | 1 39 48 | .32 | 2.4 | 1 46 | V. C. 0 02 mm. |
| | | | W. | N | 1 38 28 | ---------- | 1 39 28 | 1 40 56 | .02 | 5.2 | 1 47 | |
| 99 | 18 | $\mathrm{I}_v$ | V. | | 14 12 46 | ---------- | 14 13 03 | 14 13 13 | .30 | 2.4 | 14 19 | V. C. 0.26 mm. Felt at Antipolo: Origin near the Pacific coast E of Manila. |
| | | | W. | E | 14 12 40 | ---------- | 14 12 57 | 14 13 16 | .13 | 4 | 14 20 | |
| 100 | 21 | I | H. | WSW | ---------- | ---------- | 23 18 14 | ---------- | ------ | ------ | 23 32 | |
| 101 | 23 | $\mathrm{I}_v$ | V. | | 20 55 25 | ---------- | 20 55 49 | 20 56 02 | .05 | 2.4 | 20 59 | V. C. 0.01 mm. Eqke., III at Nueva Caceres (SE of Luzon). |
| | | | W. | N | 20 55 24 | ---------- | 20 55 46 | 20 56 03 | .01 | 2 | 21 00 | |
| 102 | 24 | I | H. | WSW | ---------- | 6 59 05 | ---------- | ---------- | ------ | ------ | 7 19 | |
| 103 | 24 | $\mathrm{I}_r$ | H. | WSW | 11 53 40 | ---------- | 11 56 31 | 11 58 40 | .05 | 8.4 | 12 14 | |
| 104 | 24 | $\mathrm{I}_d$ | V. | | 15 34 01 | ---------- | 15 34 18 | 15 34 46 | .40 | 2.4 | 15 39 | V. C. 0.11 mm. |
| | | | V. | | 20 40 28 | ---------- | 20 43 50 | 20 44 16 | .01 | 11.2 | 20 58 | |
| 105 | 24 | $\mathrm{I}_r$ | H. | WSW | 20 40 22 | ---------- | 20 43 51 | 20 45 48 | .24 | 9.3 | 21 05 | |
| | | | W. | E | 20 40 30 | ---------- | 20 43 00 | 20 44 06 | .04 | 10.4 | 21 02 | |
| 106 | 28 | $\mathrm{I}_d$ | V. | | 12 39 11 | ---------- | 12 39 28 | 12 39 38 | .34 | 2.4 | 12 45 | V. C. 0.18 mm. |
| 107 | 28 | $\mathrm{II}_v$ | V. | | 17 47 34 | ---------- | 17 47 50 | 17 48 33 | 2.20 | 2.2 | 18 42 | V. C. 1.90 mm. Eqke., III near western coast of Zambales. |
| | | | H. | WSW | 17 47 34 | ---------- | 17 47 50 | 17 48 31 | .99 | 10 | 18 21 | |
| 108 | 28 | $\mathrm{I}_v$ | V. | | 19 18 48 | ---------- | 19 19 36 | 19 19 50 | .08 | 2.4 | 19 25 | V. C. 0.02 mm. Eqke., III at Virac (Catanduanes). |
| 109 | 29 | I | V. | | ---------- | ---------- | 3 23 17 | ---------- | ------ | ------ | 3 27 | |
| 110 | 31 | I | H. | WSW | ---------- | ---------- | 11 43 16 | ---------- | ------ | ------ | 11 58 | |
| 111 | 31 | I | H | WSW | ---------- | ---------- | 21 52 00 | ---------- | ------ | ------ | 22 36 | |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=7.8 seconds; WSW–ENE pendulum, T=8.3 seconds. Magnification of the record: NNW-SSE, 15 times; WSW-ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1000 kilograms; N=N-S component; E=E-W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above the sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, 17$^h$ 13$^m$. **Butúan** (N de Mindanao). Temblor oscilatorio, dirección ENE–WSW, intensidad IV, duración 20 segundos. Hizo parar un reloj de pared.

2, 2$^h$ 35$^m$ 06$^s$.* **Baguio** (W de Luzón). Temblor oscilatorio, dirección NE–SW, intensidad II.

3, 11$^h$ 54$^m$. **Vigan** (NW de Luzón). Temblor de tierra de intensidad II: se notaron solamente movimientos susultorios ó verticales.

5, 3$^h$ 54$^m$. **Butúan** (N de Mindanao). Temblor oscilatorio, dirección SE–NW, intensidad III, duración 10 segundos.

8, 4$^h$ 45$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

11, 1$^h$ 57$^m$. **Butúan** (N de Mindanao). Temblor oscilatorio, dirección E–W, intensidad IV, duración 14 segundos.

12, 9$^h$ 32$^m$ 03$^s$.* **Santo Domingo** (Islas Batanes). Temblor oscilatorio, dirección E–W, intensidad III, duración 4 segundos.

13, 11$^h$ 22$^m$ 05$^s$.* **SW. de Luzón.** Temblor de tierra de intensidad IV, sentido en toda la parte SW de la Isla de Luzón en una zona de 400 kilómetros de longitud y 100 kilómetros de anchura, que comprende las Provincias de Zambales, Bataan, Pangasinan, Tarlac, Pampanga, Rizal, Laguna, Batangas y Cavite. Tuvo su epicentro en el mar de la China al W del extremo S de la cordillera de Zambales. Á pesar de la poca intensidad que este temblor tuvo en Luzón fué registrado en todos los observatorios del Extremo Oriente y de Europa.

18, 12$^h$ 15$^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad II.

18, 14$^h$ 12$^m$ 40$^s$.* **Antipolo** (S de Luzón). Temblor de intensidad II. Su epicentro se hallaba cerca de las costas orientales de Luzón hacia la isla Polillo, donde sin duda tuvo mayor intensidad que en Antipolo, distante de ella unos 70 kilómetros.

18, 23$^h$ 54$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

22, 11$^h$ 10$^m$. **Isla de Cuyo.** Temblor oscilatorio, dirección N–S, intensidad III, duración 4 segundos.

22, 11$^h$ 35$^m$. **Santa Cruz, Laguna** (S de Luzón). Temblor oscilatorio, dirección NNE–SSW, intensidad II.

23, 20$^h$ 55$^m$ 24$^s$.* **Nueva Cáceres** (SE de Luzón). Temblor de tierra de intensidad III.

26, 23$^h$ 38$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

28, 17$^h$ 47$^m$ 34$^s$.* **Zambales** (W de Luzón). Temblor de tierra de intensidad III. Tuvo su epicentro en el mar de la China muy cerca de la costa de Zambales.

28, 19$^h$ 18$^m$ 48$^s$.* **Virac** (Catanduanes). Temblor oscilatorio, dirección NW–SE, intensidad III, duración 4 segundos.

## REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el meridiano 120° E de Greenwich.

# BULLETIN FOR JUNE, 1911.

# METEOROLOGICAL BULLETIN FOR JUNE, 1911.

By Rev. JOSÉ CORONAS, S. J.,

*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The mean atmospheric pressure of this month was, on the whole, somewhat higher than that for the same month of the preceding year, in Mindanao, the Visayas, and southern Luzon; but slightly lower in northern Luzon. The maximum pressure was quite generally observed on the 22d or 23d, the minimum on the 18th or 30th.

The monthly mean temperature differed everywhere by less than 1° C. from that of June, 1910. For Manila, the extremes were 34.6° and 22° C., registered on the 6th and 22d, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR JUNE, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from June, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from June, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Surigao | 758.43 | ---------- | 760.34 | 22 | 755.48 | 30 | 27 | ---------- | 32.8 | 22 | 22.2 | 5 |
| Cebu | 58.39 | + 0.48 | 60.35 | 23 | 55.57 | 30 | 27.3 | + 0.1 | 33.6 | 10 | 22.5 | 23 |
| Iloilo | 58.48 | + .69 | 60.48 | 22 | 55.78 | 30 | 26.7 | — .8 | 34.5 | 10 | 22.1 | 18, 19 |
| Ormoc | 58.60 | + .48 | 60.52 | 23 | 55.69 | 30 | 25.9 | — .2 | 32.1 | 15 | 21.4 | 11 |
| Tacloban | 58.99 | + .21 | 61.01 | 22 | 55.57 | 30 | 27.2 | + .3 | 34.3 | 10 | 23 | 27, 30 |
| Capiz | 58.43 | ---------- | 60.52 | 22 | 55.66 | 30 | 27.3 | ---------- | 35.3 | 15 | 22.7 | 29 |
| Calbayog | 58.40 | + .18 | 60.38 | 22 | 54.59 | 30 | 26.8 | + .4 | 33 | 10, 24 | 22.2 | 4 |
| Legaspi | 58.20 | — .15 | 60.60 | 22 | 53.74 | 30 | 27.8 | + .1 | 36.2 | 21, 23 | 22.5 | 23 |
| Atimonan | 58.04 | — .18 | 60.31 | 22 | 54.56 | 30 | 28 | + .3 | 34.7 | 23 | 22.1 | 15 |
| Paracale | 58.09 | ---------- | 60.46 | 22 | 54.37 | 30 | 28 | ---------- | 35.7 | 28 | 22.9 | 22 |
| Manila | 58.18 | + .12 | 60.35 | 22, 23 | 55.01 | 18 | 27.2 | 0 | 34.6 | 6 | 22 | 22 |
| San Isidro | 58.01 | 0 | 60.24 | 23 | 54.46 | 18 | 27.7 | 0 | 35.4 | 13 | 19.5 | 23 |
| Dagupan | 57.72 | — .09 | 60.18 | 23 | 54.14 | 18 | 28 | — .2 | 37.6 | 6 | 22.8 | 22 |
| Bolinao | 57.54 | — .02 | 60.14 | 23 | 53.48 | 18 | 27.6 | — .6 | 34.9 | 10, 12 | 23.2 | 16 |
| Baguio[1] | 636.15 | — .16 | 638.27 | 23 | 632.70 | 18 | 18.8 | — .2 | 26.2 | 10 | 15.4 | 22 |
| Vigan | 757.45 | — .40 | 760.15 | 23 | 753.32 | 18 | 28.2 | + .3 | 34.5 | 9 | 22.5 | 28 |
| Tuguegarao | 57.42 | — .70 | 59.78 | 10 | 52.92 | 18 | 29.2 | + .5 | 38.7 | 16, 18 | 21.6 | 27 |
| Aparri | 57.39 | — .90 | 59.83 | 23 | 52.88 | 18 | 28.5 | + .4 | 35.8 | 12 | 22.9 | 19 |

[1] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—If we except a few stations, we may say that the rainfall of this month exceeded that of the corresponding month of last year in Luzon and the western Visayas, while it fell short of it in the eastern Visayas and Mindanao. As concerns Manila, a comparison of the actual precipitation with the normal amount for the month shows a deficiency of 119.6 millimeters. In general we may remark that both last year and this the month of June showed a scanty rainfall, owing to the absence of atmospheric disturbances of any importance to the Philippines.

### RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JUNE, 1911.

| Station. | Total. | Departure from June, 1910. | Rainy days. | Departure from June, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from June, 1910. | Rainy days. | Departure from June, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 168.8 | —291.9 | 17 | — 5 | 51.7 | 7 | Sumay, Guam | 220.3 | + 97.3 | 20 | + 4 | 74.9 | 12 |
| Isabela, Basilan | 65.5 | —269.1 | 13 | —12 | 14.7 | 13 | Calapan | 245.6 | — 178.1 | 15 | — 9 | 117.6 | 6 |
| Zamboanga | 53.1 | — 95.6 | 8 | — 9 | 15.2 | 25 | Virac | 262.8 | + 104.5 | 15 | —10 | 126.2 | 30 |
| Davao | 163.6 | —238.4 | 9 | — 5 | 52.1 | 12 | Nueva Caceres | 212 | + 103.8 | 14 | 0 | 82.5 | 30 |
| Cotabato [1] | 162.6 | ------- | 13 | ------ | 63.5 | 10 | Batangas | 244.6 | + 168.4 | 9 | 0 | 104.6 | 17 |
| Dapitan [2] | 85.3 | ------- | 5 | ------ | 46.7 | 17 | Atimonan | 83.3 | — 82.6 | 11 | — 9 | 34.8 | 7 |
| Butuan | 62.9 | —132.2 | 13 | —11 | 19.3 | 4 | Silang | 143.3 | + .2 | 11 | + 1 | 57.9 | 13 |
| Dumaguete | 177.2 | + 66.6 | 18 | + 1 | 37.3 | 2 | Paracale | 215.6 | ------- | 15 | ------ | 98.8 | 30 |
| Yap, W. Carolines | 199 | — 36.4 | 24 | — 2 | 24.4 | 26 | Santa Cruz, La Laguna | 167.4 | + 15.3 | 20 | + 2 | 31.7 | 30 |
| Tagbilaran [3] | 141 | ------- | 12 | ------ | 75.9 | 12 | Manila | 117.2 | + 37.9 | 17 | + 3 | 43.4 | 27 |
| Surigao | 159.3 | — 65.2 | 12 | —12 | 40.1 | 18 | Antipolo | 168.8 | ------- | 12 | ------ | 68.6 | 30 |
| Maasin | 176.1 | — 45.1 | 10 | — 1 | 51.3 | 3 | Iba | 570.1 | + 364.8 | 21 | + 2 | 127.7 | 19 |
| Guiuan | 251.9 | ------- | 16 | ------ | 40.6 | 5 | San Isidro | 156.4 | + 84.8 | 17 | + 6 | 49.6 | 29 |
| Cebu | 134.5 | — 6.8 | 19 | + 5 | 38.9 | 12 | Tarlac | 111.8 | + 3.9 | 12 | + 1 | 25.7 | 19 |
| Iloilo | 253.9 | +143.5 | 20 | + 3 | 47.7 | 19 | Baler | 117.3 | — 275 | 15 | — 8 | 35.3 | 9 |
| San Jose Buenavista | 609.3 | +352.8 | 25 | + 2 | 72.1 | 30 | Dagupan | 286 | + 114 | 20 | + 4 | 44.9 | 13 |
| Cuyo | 451.5 | +194.3 | 24 | + 2 | 104.6 | 11 | Bolinao | 606.5 | + 339.7 | 22 | + 5 | 185.5 | 16 |
| Ormoc | 186.9 | + 46.7 | 18 | — 4 | 32.5 | 10 | Baguio | 245.4 | + 15.1 | 19 | + 2 | 36.9 | 29 |
| Tacloban | 183.5 | — 21.6 | 21 | — 1 | 32.5 | 13 | San Fernando, Union | 297.1 | ------- | 18 | ------ | 52.1 | 17 |
| Capiz | 216.4 | ------- | 19 | ------ | 47.3 | 7 | Echagüe | 57.3 | + 33.8 | 9 | + 2 | 20.6 | 15 |
| Borongan | 229.7 | —149 | 21 | — 4 | 39.4 | 30 | Candon | 193.8 | + 84.3 | 18 | + 7 | 50.8 | 2 |
| Calbayog | 232.6 | + 60.4 | 16 | — 2 | 84.4 | 30 | Vigan | 333.1 | + 95.2 | 21 | + 4 | 60 | 16 |
| Masbate [2] | 30.2 | ------- | 4 | ------ | 23.9 | 21 | Tuguegarao | 84.1 | + 45.2 | 5 | 0 | 24.4 | 30 |
| Laoang | 161.2 | ------- | 14 | ------ | 64.2 | 30 | Laoag | 95.1 | — 147.7 | 14 | — 1 | 20.8 | 16 |
| Gubat | 243.1 | +164.2 | 12 | — 1 | 108.9 | 30 | Aparri | 84.1 | — 35.2 | 6 | — 1 | 22.4 | 14 |
| Legaspi | 154.5 | — 59.7 | 15 | — 3 | 70.8 | 30 | Sto. Domingo, Batanes Is. | 77.1 | + 30.1 | 8 | — 3 | 43.2 | 20 |

[1] 22 days of observation only. [2] 28 days of observation only. [3] 27 days of observation only.

## DEPRESSIONS AND TYPHOONS.

During the entire month of June Manila Observatory had occasion to announce the existence of only one typhoon, far out in the Pacific Ocean, and of a likewise far distant depression over the China Sea. Their approximate tracks will be published in the Bulletin for July, together with those of the typhoons which occurred during that month.

### TYPHOON OF JUNE 12 TO 20, 1911.

As shown by the observations made at the station of Guam on the 12th, this typhoon crossed the southern part of the Ladrone Islands during the afternoon of that day. During the 12th and 13th the storm must have moved almost due west: but on the 15th it began probably to incline gradually to the north. At 6 a. m. of the 17th the center of the storm could be located with sufficient accuracy to the east of Bashi Channel and near the meridian 127° E. On that day it moved due north, its vortex reaching by 10 p. m. a position between 24° and 25° latitude north, and 126° and 127° longitude east. Thereafter the storm center advanced toward north-north-east, passing west of, and close to, Naha at 6 a. m. of the 18th, and reaching Kiusiu in the evening of the same day. On the 19th it finally traversed the large Island of Nippon on a north-easterly course.

Manila Observatory sent the following telegrams bearing on this typhoon to Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

June 12, 5 p. m. Typhoon east of the Ladrone or Mariana Islands, direction unknown.
June 13, 8 a. m. Typhoon west of the Ladrone or Mariana Islands, moving west-northwest.
June 16, 9.20 a. m. Typhoon southeast of Formosa, moving west-northwest.
June 17, 9.25 a. m. Typhoon southeast of Meiacosima Islands, inclining northward.
June 18, 11.30 a. m. Typhoon northeast of Meiacosima Islands, moving north-northwest or north.

From Hongkong Observatory we received the following advices:

June 16, 11 a. m. Typhoon northeast of Luzon, moving west-northwest.
June 17, 11.30 a. m. Typhoon south of Loochoo Islands, moving north.
June 18, 10.45 a. m. Typhoon near Loochoo Islands, moving north-northwest.

The stations on the China coast were warned by Zikawei by means of the following despatches:

June 16, 11.30 a. m. Typhoon over the Ocean, latitude 20° to 23°; longitude 125° to 130°, moving west-northwest.
June 17, 9.30 a. m.: Typhoon southeast of Meiaco-Sima, moving northwest.
June 18, 10 a. m.: Typhoon center of Ryukyu (Loochoos), moving northeast.

### THE DEPRESSION OF JUNE 18 TO 21, 1911.

This depression appears to have formed to the west of northern Luzon, at a distance of about 250 miles from the coast of the island. It moved first toward northwest, and then to north-northwest, entering the Continent between Macao and Kwongchaw-wan on the 21st.

The following storm warnings were sent by Manila Observatory to the other meteorological centers in the Far East:

June 19, 6.15 p. m.: Depression northern part of China Sea.
June 20, 9.20 a. m.: Typhoon over northern part of China Sea, direction unknown.

The ordinary daily weather note, issued at 11.50 a. m. of the 21st, contained the following statement:

The depression or typhoon mentioned yesterday is situated apparently to the west of Hongkong, moving to north-northwest.

Hongkong Observatory, on its part, favored us with these notices:

June 20, noon: Typhoon north of Paracels, direction of motion unknown.
June 21, 11.15 a. m.: Typhoon west of Hongkong, moving north-northwest.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes es en general algo mayor que la del mismo mes del año pasado en Mindanao, Visayas y Sur de Luzón; pero algo menor en el norte de Luzón. Las mayores presiones se observaron generalmente el 22 ó 23; y las menores el 18 ó 30.

La temperatura media mensual se diferencia en todas partes en menos de 1° C de la de Junio 1910. Los valores extremos de Manila fueron 34.6° C y 22° C, registrados respectivamente los días 6 y 22.

**Precipitación acuosa.**—Salvas pocas excepciones, se puede decir que la precipitación acuosa de este mes superó á la del año pasado en Luzón y Visayas occidentales, y fué menor en las Visayas orientales y Mindanao. Sin embargo, comparada la lluvia caída este mes en Manila con la normal de Junio hallamos una diferencia negativa de 119.6 mm. En general se puede decir que tanto este año como el año próximo pasado el mes de Junio fué escaso en lluvias, debido á la ausencia de perturbaciones atmosféricas de importancia para Filipinas.

## DEPRESIONES Y TIFONES.

El Observatorio de Manila no anunció en todo el mes más que un tifón lejano en el Pacífico y una depresión también lejana en el Mar de China. Las trayectorias aproximadas de entrambos serán incluídas en el boletín de Julio juntamente con las de los tifones de dicho mes.

### TIFON DE 12 A 20 DE JUNIO, 1911.

Este tifón cruzó las Islas Marianas por el norte de Guam la tarde del día 12, según se echa de ver por las observaciones hechas aquel día en aquella estación. Durante los días 12 y 13 hubo de moverse al W: pero el 15 empezó á inclinarse gradualmente al N. Á 6 a. m. del 17 se le pudo situar con bastante aproximación al E del canal de Bashi y cerca del meridiano 127° E. El 17 se dirigió al norte, viniendo á hallarse el vórtice á 10 p. m. de dicho día entre los 24° y 25° Lat. N y 126° y 127° Long. E. Luégo se movió al NNE pasando muy cerca y por el W de Naha á 6 a. m. del 18. Llegó á Kiusiu la noche del mismo día, y durante el 19 atravesó la grande isla de Nippón en dirección al NE.

El Observatorio de Manila envió á Tokio, Zikawei, Taihoku, Hongkong y Phulien los siguentes telegramas referentes á este tifón:

Día 12, 5 p. m.: Tifón al E. de las Islas Ladrones ó Marianas, dirección desconocida.
Día 13, 8 a. m.: Tifón al W de las Islas Ladrones ó Marianas, moviéndose al WNW.
Día 16, 9.20 a. m.: Tifón al SE de Formosa moviéndose al WNW.
Día 17, 9.25 a. m.: Tifón al SE de Meiacosima, inclinándose al N.
Día 18, 11.30 a. m.: Tifón al NE de Meiacosima, moviéndose al NNW ó N.

Del Observatorio de Hongkong recibimos á la vez estos telegramas:

Día 16, 11 a. m.: Tifón al NE de Luzón moviéndose al WNW.
Día 17, 11.30 a. m.: Tifón al S de las Islas Liukiu, moviéndose al N.
Día 18, 10.45 a. m.: Tifón cerca de las Islas Liukiu, moviéndose al NNW.

El Observatorio de Kikawei envió los siguientes avisos de tifón á las estaciones de la costa de China:

Día 16, 11.30 a. m.: Tifón en el Océano Pacífico, latitud 20° á 23°, longitud 125° á 130° moviéndose al WNW.
Día 17, 9.30 a. m.: Tifón al SE de Meiacosima, moviéndose al NW.
Día 18, 10 a. m.: Tifón en el centro de Liukiu, moviéndose al NE.

### DEPRESION DE 18 A 21 DE JUNIO, 1911.

Esta depresión parece haberse formado al W del norte de Luzón á la distancia de unas 250 millas de la costa occidental de dicha isla. Se movió al NW primero y al NNW después penetrando en el Continente el día 21 por entre Macao y Kwong-chawwan.

Los siguientes avisos de tifón fueron trasmitidos por el Observatorio de Manila á los demás centros meteorológicos del Extremo Oriente:

Día 19, 6.15 p. m.: Depresión en la parte norte del Mar de China.
Día 20, 9.20 a. m.: Tifón en la parte norte del Mar de China, dirección desconocida.

Y en la nota ordinaria del tiempo dada á 11.50 a. m. del día 21 se decía lo siguiente:

La drepresión ó tifón indicado ayer se halla aparentemente al W de Hongkong, moviéndose al NNW.

El Observatorio de Hongkong nos favoreció con estos telegramas:

Día 20, 12 mediodía: Tifón al N de Paracels, dirección desconocida.
Día 21, 11.15 a. m.: Tifón al W de Hongkong, moviéndose al NNW.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 758.73 | 26.8 | 32.2 | 23.7 | 30.7 | 31.4 | 31.8 | 31.6 | 29 | 28.5 | 85 | 22.2 | 1.3 | 1.5 |
| 2 | 59.20 | 27.4 | 32.1 | 23.8 | 29.9 | 31.3 | 31.1 | 31.2 | 29.1 | 28.5 | 76.8 | 20.6 | 3.7 | 3 |
| 3 | 59.48 | 26.7 | 33.6 | 22.7 | 29.9 | 32 | 30.9 | 31.1 | 29.2 | 28.3 | 79.8 | 20.6 | 3.1 | 2.4 |
| 4 | 59.46 | 27.4 | 34 | 22.5 | 29.9 | 32 | 30.7 | 30.9 | 29.3 | 28.6 | 77.5 | 20.8 | 3.8 | 3.1 |
| 5 | 59.21 | 27.3 | 32.5 | 22.7 | 30.3 | 31.9 | 30.7 | 31 | 29.1 | 28.3 | 76.7 | 20.4 | 3.2 | 2.5 |
| 6 | 58.56 | 28.1 | 34.6 | 23.3 | 29.8 | 32.2 | 30.5 | 31.1 | 29.2 | 28.6 | 69.7 | 19.2 | 5.8 | 4.3 |
| 7 | 58.27 | 27 | 32.9 | 23.5 | 30.9 | 31.8 | 31 | 31 | 29.3 | 28.7 | 80.4 | 21.2 | 2.2 | 2.2 |
| 8 | 57.94 | 27.8 | 33.8 | 22.7 | 30.9 | 31.9 | 30.7 | 31 | 29.2 | 28.7 | 77.5 | 21.2 | 4.8 | 3.1 |
| 9 | 58.81 | 27.6 | 33.6 | 24.4 | 30 | 32.6 | 30.6 | 31.2 | 29.2 | 28.7 | 81 | 22.1 | 3.3 | 2.6 |
| 10 | 59.59 | 27.1 | 34.4 | 23.1 | 30.8 | 33 | 31 | 31.2 | 29.3 | 28.7 | 82.7 | 21.7 | 2.6 | 2.3 |
| 11 | 59.18 | 26.1 | 32.2 | 22.9 | 30.2 | 30.4 | 30.8 | 30.7 | 29.3 | 28.7 | 88.8 | 22.2 | 3.4 | 3.5 |
| 12 | 58.29 | 27.3 | 32.4 | 22.9 | 29.1 | 31 | 30.3 | 30.6 | 29.3 | 28.7 | 81.4 | 21.8 | 3.3 | 2.6 |
| 13 | 58.39 | 26.9 | 32.6 | 23.1 | 29.2 | 30.9 | 30.2 | 30.5 | 29.2 | 28.7 | 80.3 | 21 | 2.8 | 2.3 |
| 14 | 59.55 | 27.1 | 31.5 | 23.8 | 29.5 | 30.7 | 30.2 | 30.4 | 29.3 | 28.7 | 83.3 | 22 | 3.1 | 2.4 |
| 15 | 59.12 | 27.4 | 31.7 | 22.4 | 29.6 | 31.3 | 30.1 | 30.4 | 29.3 | 28.7 | 83 | 22.3 | 3.5 | 3.2 |
| 16 | 57.47 | 27.2 | 31.7 | 24.7 | 29.7 | 30.6 | 30.2 | 30.5 | 29.3 | 28.7 | 81 | 21.7 | 2.7 | 2.4 |
| 17 | 55.54 | 27.1 | 30.3 | 24.8 | 29.2 | 30.9 | 30.1 | 30.3 | 29.3 | 28.7 | 85.5 | 22.7 | 2.5 | 2.2 |
| 18 | 55.01 | 26.5 | 31.6 | 24.3 | 29.1 | 31 | 29.9 | 30.4 | 29.2 | 28.7 | 86.8 | 22.3 | 2 | 2 |
| 19 | 56.22 | 25.9 | 31.3 | 23.9 | 29.2 | 29.7 | 30 | 29.9 | 29.3 | 28.9 | 86.3 | 21.4 | 1.1 | 1.5 |
| 20 | 57.11 | 26.2 | 31.5 | 23.2 | 29.3 | 29.7 | 29.7 | 29.9 | 29.2 | 28.8 | 85 | 21.4 | 2.8 | 2 |
| 21 | 58.94 | 26.6 | 32.5 | 23.7 | 28.6 | 30 | 29.7 | 29.8 | 29.1 | 28.8 | 84.2 | 21.7 | 1.3 | 1.6 |
| 22 | 60.35 | 27.8 | 33.7 | 22 | 28.8 | 30.9 | 29.7 | 30 | 29.2 | 28.9 | 76.6 | 20.9 | 5.1 | 3.4 |
| 23 | 60.35 | 28 | 33 | 23.6 | 29.5 | 32 | 29.9 | 30.3 | 29.2 | 28.8 | 80.2 | 22.3 | 3.4 | 2.7 |
| 24 | 58.76 | 27.9 | 32.9 | 24.1 | 30.2 | 32.4 | 30.3 | 30.5 | 29.2 | 28.9 | 81.3 | 22.5 | 3.6 | 2.8 |
| 25 | 57.24 | 28.5 | 33.5 | 24.6 | 30.2 | 32.7 | 30.6 | 30.8 | 29.2 | 28.8 | 78.5 | 22.5 | 4.1 | 3.3 |
| 26 | 57.14 | 27.8 | 32.4 | 23.9 | 30.9 | 32.3 | 30.9 | 31 | 29.2 | 28.9 | 81 | 22.4 | 3.9 | 2.8 |
| 27 | 57.35 | 27.4 | 32.6 | 23.2 | 30.6 | 32.7 | 30.9 | 31 | 29.2 | 28.9 | 83 | 22.3 | 3.3 | 2.5 |
| 28 | 57.82 | 27.1 | 32.1 | 23.3 | 29.7 | 31.8 | 30.7 | 30.8 | 29.2 | 28.9 | 82.9 | 21.9 | 3.7 | 2.5 |
| 29 | 57.09 | 26.4 | 33 | 22.7 | 30 | 32 | 30.6 | 31 | 29.3 | 29 | 83.7 | 21.2 | 2.8 | 2.1 |
| 30 | 55.24 | 26.9 | 32.3 | 23.1 | 29.3 | 31.3 | 30.3 | 30.6 | 29.2 | 28.8 | 82.9 | 21.6 | 3 | 2.7 |
| Mean | 758.18 | 27.2 | 32.6 | 23.4 | 29.8 | 31.5 | 30.5 | 30.7 | 29.2 | 28.7 | 81.4 | 21.6 | 3.2 | 2.6 |
| Total | | | | | | | | | | | | | 95.2 | 77.5 |
| Departure from normal | +0.24 | —0.7 | +0.3 | —0.5 | | | | | | | +0.4 | —0.8 | | |

| Date. | Wind. | | | | Clouds. | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | |
| | | | | | | Upper. | Lower. | | | | |
| | | *Km.* | *Km.* | | *0-10.* | | | *h.* | *m.* | *mm.* | |
| 1 | E quad. | 102 | 11.5 | E | 8.8 | Ci.-S. | Cu.-N. E | 3 | 00 | 1.3 | ● ⛈° p. |
| 2 | ESE | 160.5 | 17.5 | E | 9.3 | Ci.-S. | Cu.-N. SEbyE | 1 | 20 | | ○ a. p. |
| 3 | E quad. | 123 | 20 | SSW | 8.4 | Ci.-S. | Cu. SE | 5 | 30 | | ○° ⊤° V ψ$^{2}$ p. |
| 4 | E quad. | 150 | 13 | W | 5.3 | Ci. | Cu. E | 8 | 20 | .5 | p° a. ψ p. |
| 5 | E quad. | 99.5 | 11 | SE | 7.2 | Ci.-S. | Cu. EbyN | 4 | 20 | | |
| 6 | NE quad. | 180 | 22 | ENE | 6.4 | Ci. NE | Cu. E | 7 | 10 | | |
| 7 | N quad. | 152 | 13 | WNW | 7.4 | Ci.-S. | Cu.-N. E | 4 | 10 | 3.8 | ● ⛈ p. |
| 8 | SE quad. | 151 | 17 | WNW | 7.6 | Ci. | Cu. E | 6 | 30 | | d° p. |
| 9 | E quad. | 148.5 | 22 | N | 7.8 | A.-Cu. ESE | Cu. E | 4 | 30 | | ⛈ p. |
| 10 | Variable. | 125.5 | 22 | NW | 7.1 | Ci., Ci.-S. | Cu. E | 6 | 35 | 1 | ⛈ ● ↙ p. |
| 11 | W quad. | 78.5 | 14 | WNW | 8.1 | Ci.-S. | Cu. E | 3 | 05 | 29.2 | ● a. ⊤ ●$^{2}$ p. |
| 12 | E quad. | 149 | 12.5 | NNE | 8.2 | Ci.-S. | Cu. E | 5 | 30 | | ⛈ p. |
| 13 | SE quad. | 140 | 15 | S | 8.7 | Ci.-S. | Cu. SE | 0 | 40 | | ⛈ p° p. |
| 14 | SW quad. | 273.5 | 33 | SWbyW | 6.3 | Ci.-S. NE | Cu. E | 7 | 30 | | d° a. ○° p. |
| 15 | SW quad. | 363.5 | 33 | WSW | 5.4 | Ci. | Cu. SWbyW | 8 | 20 | 3.6 | Ω ⌒ a. ● a. p. |
| 16 | W quad. | 422.5 | 42 | SW | 9.2 | Ci.-S. | Cu.-N. W | 3 | 05 | 2.9 | ● a. p. |
| 17 | SW quad. | 381.5 | 22 | W | 8.8 | A.-Cu. SW | Cu.-N. WSW | 2 | 05 | 3.3 | ● a. ⊕° p. |
| 18 | S quad. | 311.5 | 24 | SW | 9.6 | Ci.-S., A.-Cu. | Cu.-N. SSW | 3 | 10 | 7.3 | ⛈° p. ● a. p. |
| 19 | S quad. | 227.5 | 26 | SbyW | 9.8 | Ci.-S. | Cu.-N. SW | 1 | 15 | 4.6 | p a. d p. |
| 20 | S quad. | 207.5 | 21 | SE | 9.9 | Ci.-S. | Cu. SbyW | 1 | 05 | 3.6 | ● a. |
| 21 | Variable. | 124.5 | 24.5 | SSW | 9.7 | Ci.-S. | Cu. SbyE | 1 | 15 | 3.7 | ⛈ ● p. |
| 22 | SW quad. | 229 | 22 | WSW | 2.9 | Ci. | Cu. | 9 | 15 | | |
| 23 | W quad. | 233 | 25 | SW | 3.7 | Ci. | Cu. SWbyS | 8 | 55 | 2.8 | |
| 24 | W quad. | 257 | 21 | SW | 7.2 | Ci. | Cu. N | 7 | 35 | | ○° a. ⛈° p. |
| 25 | W quad. | 265.5 | 24 | SW | 5.4 | Ci. | Cu. NW | 7 | 45 | .7 | ● a. |
| 26 | W quad. | 299 | 29 | WbyN | 8.4 | Ci -S. | Cu NW | 1 | 20 | | |
| 27 | SW quad. | 319.5 | 30 | SW | 7.3 | A.-Cu. NE | Cu. WSW | 4 | 40 | 43.4 | ●$^{2}$ p. |
| 28 | SW quad. | 285 | 26.5 | SW | 6.2 | A.-Cu. E | Cu. WSW | 8 | 05 | | |
| 29 | NE quad. | 165 | 23 | W | 7.7 | Ci.-S. NE | Cu. W | 6 | 00 | 3.1 | ○ ⊤ ● p. |
| 30 | NW quad. | 349.5 | 26 | WSW | 7.8 | Ci.-S. | Cu. N | 5 | 55 | 2.4 | ● p. |
| Mean | | 215.8 | 22.1 | | 7.5 | | | 4 | 56 | | |
| Total | | | | | | | | 147 | 55 | 117.2 | |
| Departure from normal | | —15.0 | | | + 0.5 | | | —24 | 35 | —119.6 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 758.89 | 26.7 | 30.2 | 23.7 | 86.2 | ENE | 1.5 | 8.5 | A.-Cu. | Cu.-N. E | 8.1 | d° a. |
| 2 | 59.40 | 26.6 | 29.7 | 24.1 | 87.8 | NE | 1.2 | 8 | A.-Cu. NE | Cu.-N. E | 1.5 | ●° d° a. Ω$^{2}$ p. |
| 3 | 59.33 | 26.3 | 32.5 | 23.6 | 89 | NW | .5 | 6.7 | Ci.-S. NE | Cu.-N. E | 11.7 | Ω$^{2}$ ● a. d ϟ$^{2}$ p. |
| 4 | 59.53 | 24.8 | 28.1 | 23.2 | 94.2 | Variable | .8 | 9 | Ci.-S. | Fr.-N. E | 5.8 | ϟ$^{2}$ d a. d p. |
| 5 | 58.61 | 26.8 | 31.2 | 22.2 | 84 | E quad. | 1 | 3 | Ci.-S. | Cu. NE | ------ | ϟ$^{2}$ ≡° a. ∞ Ω$^{2}$p. |
| 6 | 58 | 27.1 | 31.6 | 22.3 | 84.2 | E quad. | .8 | 3.3 | Ci. SE | Cu. E | ------ | Ω$^{2}$ a. ∞ ϟ$^{2}$ p. |
| 7 | 57.88 | 27.7 | 32.5 | 23.2 | 83.2 | SE quad. | .8 | 4.3 | Ci.-S. SE | Cu., Cu.-N. SW | ------ | Ω$^{2}$ ϟ$^{2}$a. ∞ p. |
| 8 | 57.94 | 27.4 | 31.5 | 23.4 | 86 | SE quad. | .8 | 3.7 | Ci.-S. | Cu.-N. | ------ | Ω$^{2}$ a. ∞ ϟ$^{2}$ p. |
| 9 | 58.43 | 27.6 | 31.4 | 23.4 | 84.5 | NW quad. | .7 | 3 | Ci.-S. | Cu.-N. | ------ | Ω$^{2}$ a. p. ∞ p. |
| 10 | 59.04 | 27.2 | 31.6 | 24 | 87.7 | NW | .3 | 4.2 | Ci.-S. W | Cu.-N. E | 6.4 | ϟ$^{2}$ Ω$^{2}$ a. ●° p. |
| 11 | 58.45 | 26.4 | 28.8 | 23.6 | 90.7 | NW quad. | .7 | 9 | Ci.-S. E, S | Cu.-N. N | 39.9 | ⌈ϟ ϟ$^{2}$ ● p. |
| 12 | 58.05 | 26.5 | 30.6 | 23.9 | 88.2 | Variable | .8 | 8 | Ci. S | Cu.-N. | 2.3 | ϟ a. d° p. |
| 13 | 58.61 | 27.2 | 31.7 | 23.5 | 84.2 | W quad. | 1 2 | 4.7 | A.-Cu. S | Cu.-N. | 13.2 | Ω$^{2}$ a. ⌈ϟ° ●° p. |
| 14 | 59.43 | 27.4 | 32 | 24.3 | 85.2 | SW quad. | 1.2 | 8 | A.-Cu. S | Cu.-N. SW | ------ | ●° a. Ω$^{2}$ p. |
| 15 | 59.26 | 29 | 32.2 | 25.7 | 78.5 | SW quad. | 2 | 6.7 | Ci-S., A.-Cu. NE, S | Cu., Cu.-N. SW | ------ | ∞ Ω° p. |
| 16 | 57.84 | 27.8 | 30.2 | 25.3 | 76.5 | SW quad. | 3.7 | 8.7 | Ci.-S. NE | Cu., N.-cf. SW | ------ | |
| 17 | 57.11 | 28.4 | 32.5 | 26.2 | 72.8 | SW quad. | 2.5 | 6.2 | Ci.-S. NE | Cu.-N. SW | ------ | ϟ$^{2}$ p. |
| 18 | 57.13 | 28.2 | 31.6 | 24.9 | 73.5 | S, SW | 1 | 8.8 | Ci.-S. NE | Cn.-N. SW | 40.1 | ϟ a. p. |
| 19 | 58.52 | 26.1 | 30 | 23.3 | 88.3 | Variable | .5 | 7 | Ci.-S. NE | Cu.-N. | ------ | ●$^{2}$ a. Ω$^{2}$ p. |
| 20 | 58.65 | 27.1 | 31.7 | 22.5 | 83.7 | Variable | .8 | 6 | Ci.-S., A.-Cu. NE, SE | Cu.-N. | ------ | Ω$^{2}$ a. p. |
| 21 | 59.56 | 27.1 | 31.5 | 23.9 | 87.5 | NW quad. | .5 | 6.7 | Ci. NE | Cu.-N. WSW | ------ | Ω$^{2}$ d° a. Ω$^{2}$ p. |
| 22 | 60.34 | 27.7 | 32.8 | 23.5 | 83.5 | Variable | .7 | 4 | Ci., Ci.-S. NE | Cu.-N. | ------ | Ω$^{2}$ a. Ω° p. |
| 23 | 60.28 | 26.1 | 30.4 | 23.1 | 88.7 | Variable | .7 | 5.3 | Ci.-S. | Cu.-N. S | ------ | ϟ d° a. ϟ$^{2}$ Ω p. |
| 24 | 58.90 | 26.6 | 31.2 | 22.9 | 86 | Variable | .5 | 5 | Ci. NE | Cu.-N. | ------ | Ω$^{2}$ a. p. ϟ$^{2}$ p. |
| 25 | 57.73 | 27.3 | 32.1 | 23.1 | 83.2 | Variable | .8 | 7 | Ci.-S. NE | Cu.-N. | 5.1 | ϟ$^{2}$ Ω$^{2}$ a. ϟ$^{2}$ ●°p. |
| 26 | 57.98 | 27.3 | 30.8 | 23.4 | 83.8 | SW quad. | 1.2 | 9 | Ci.-S. NE | Cu.-N. W | 1.8 | d ϟ p. |
| 27 | 57.93 | 27.2 | 30.6 | 24 | 83.3 | WSW, SSW | 1.2 | 8.5 | Ci.-S. NE | Cu. N. W | ------ | ϟ a. Ω$^{2}$ p. |
| 28 | 57.82 | 27.1 | 31.7 | 22.8 | 83 | SW quad. | .8 | 5.2 | Ci.-S. | Cu.-N. SW | 6.1 | Ω$^{2}$ a. p. |
| 29 | 56.84 | 25.9 | 28.7 | 23.1 | 87.5 | SW | .5 | 9.8 | Ci.-S., A.-S. | Cu.-N. SW | 7.1 | ● a. |
| 30 | 55.48 | 26.1 | 26.8 | 24.4 | 82.5 | SW | 2.2 | 10 | ------------------ | Fr.-N. SW | 10.2 | ●$^{2}$ a. ϟ° p. |
| Mean | 758.43 | 27 | 30.9 | 23.7 | 84.6 | ------------ | 1.1 | 6.6 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 159.3 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.70 | 27.5 | 31.2 | 22.8 | 77.7 | ENE | 7.3 | 6.2 | Ci.-S. | Cu. ENE, E | ------ | ≡° Ω d a. ϟ p. |
| 2 | 59.34 | 27.1 | 30.1 | 23 | 81.3 | SE | 4.8 | 7.7 | Ci.-S. | Cu.-N. ENE | 11.6 | Ω ● a. ⌈ϟ p. ϟ |
| 3 | 59.47 | 26.8 | 31 | 24.1 | 81.2 | SW, S | 4.4 | 6.2 | Variable | Cu., Cu.-N. ENE | 8.9 | Ω a ●° p. ⌈ϟ a. p. |
| 4 | 59.34 | 27.6 | 32 | 23.3 | 76.5 | E | 7.5 | 6 | Ci., Ci.-S. | Cu. ENE | .5 | ● a. ⌈ϟ a. p. |
| 5 | 58.45 | 28 | 32 | 24 | 76.3 | E quad. | 8 | 5 | Ci., Ci.-S. | Cu. ENE | ------ | Ω ●° a. ϟ a. p. |
| 6 | 57.73 | 28.2 | 32.8 | 24.5 | 72.8 | NE quad. | 8 | 2.8 | Ci. | Cu. ENE | ------ | Ω a. |
| 7 | 57.66 | 28.6 | 33 | 24.7 | 72 | ENE | 6 | 3.2 | Ci. | Cu. E | 3 | Ω$^{2}$a. ⌈ϟa.p. ψp. |
| 8 | 57.81 | 28.1 | 32.3 | 24 | 77.2 | S | 4.7 | 5.8 | Ci. | Cu. E | .8 | Ω ϟ a. ●° ⌈ϟ a.p. |
| 9 | 58.35 | 28.6 | 33.5 | 24.8 | 73.5 | SE, SSE | 5.7 | 3.5 | Ci. | Cu. ENE | ------ | Ω a. ϟ ⌈ϟ p. |
| 10 | 58.91 | 28.6 | 33.6 | 25 | 73.8 | SE quad. | 5.3 | 4.7 | Ci., Ci.-S. | Cu. ENE | 4.3 | Ω a. ●° ϟ ⌈ϟ p. |
| 11 | 58.37 | 28 | 32.6 | 24.1 | 75.8 | E | 6.8 | 5.3 | Ci., Ci.-S. | Cu. ENE | 3.9 | ≡° a. d p. ϟ ⌈ϟ |
| 12 | 58.18 | 27.3 | 31.2 | 24.1 | 77.8 | Variable | 5 | 7.2 | Ci.-S. | Cu.-N. ENE | 38.9 | Ω a. ⌈ϟ ● a. p. |
| 13 | 58.72 | 27 | 31.2 | 24 | 79.7 | SW quad. | 7.2 | 6.8 | Ci. | Cu. SSW | 2.1 | ● a. p. ⌈ϟ p. |
| 14 | 59.46 | 27.8 | 31.6 | 24.4 | 73.8 | SSW | 5.9 | 5.5 | A.-Cu. ENE | Cu. SW | 2 | ≡° a. ●° p. ⌈ϟ ϟ |
| 15 | 59.28 | 28.5 | 31.9 | 24.5 | 74.7 | SW quad. | 8.9 | 4.3 | Ci., Ci.-S. | Cu. SW | ------ | Ω a. ⌈ϟ ∞ ϟ p. |
| 16 | 58.06 | 27.3 | 31 | 23.6 | 74.5 | SW quad. | 11.1 | 6.3 | Ci.-S. | Cu., Cu.-N. SW | 7.9 | Ω ⌈ϟ ● a. ψ p. |
| 17 | 56.98 | 27.3 | 31.5 | 24.5 | 73.2 | SW | 10.1 | 7.5 | A.-Cu. W | Cu., Cu.-N. W | 2.5 | Ω ⌓ a. ● p. |
| 18 | 57.21 | 26.2 | 29.5 | 24 | 79.8 | SW quad. | 8.5 | 8.5 | Ci.-S. | Cu., N. WSW | 6.8 | Ω ◯ a. ● d ⌈ϟ p. |
| 19 | 58.10 | 27.2 | 31.1 | 23.7 | 76 | SSW | 6.1 | 6.7 | Ci.-S. NNE | Cu. SW | ------ | Ω ⊕ a. ○ ⌈ϟ p. |
| 20 | 58.48 | 27.8 | 32.1 | 24.3 | 73.8 | SW | 5.2 | 4.5 | Ci.-S. | Cu. SW | ------ | Ω a. ○ ϟ p. |
| 21 | 59.41 | 27.8 | 33.2 | 24 | 76 | E | 5.3 | 6 | A.-Cu. E | Cu. ESE | ------ | Ω a. ⌈ϟ a. p. |
| 22 | 60.28 | 27.6 | 33 | 24.1 | 77.7 | Variable | 5.5 | 3.5 | Ci. | Cu. ENE | ------ | ≡° Ω a. ⌈ϟ a. p. |
| 23 | 60.35 | 26.3 | 31.5 | 22.5 | 83.8 | SE | 5.2 | 5 | Ci., Ci.-S. | Cu. ENE | 9.7 | Ω a. ● p. ⌈ϟ a. p. |
| 24 | 58.91 | 27 | 32 | 23.9 | 78.3 | SSW, SW | 5.5 | 5.2 | Ci. | Cu. ENE | ------ | Ω a. ⌈ϟ a. p. |
| 25 | 57.83 | 26.3 | 31.4 | 23.3 | 82 | SSW | 7.9 | 7.2 | Ci.-S. | Cu. WSW | 13.4 | Ω a. ⌈ϟ ● p. ϟ |
| 26 | 57.94 | 26.6 | 30.3 | 23.5 | 78.3 | SW quad. | 6.5 | 8 | Ci.-S. | Cu., N.-cf. SW | ------ | Ω ○ a. ϟ a. p. |
| 27 | 57.94 | 26.3? | 30.9 | 23.9 | 82.2? | SW quad. | 6.3 | 6.5 | Ci.-S. | Cu., Cu.-N. SW | 7.9 | ≡° Ω a. ● d ⌈ϟ p. |
| 28 | 57.96 | 25.6 | 31.8 | 22.8 | 86.3 | S, WNW | 5.2 | 4.3 | Ci. | Cu. SW | 9.7 | ≡° Ω a. ● ⌈ϟ p. |
| 29 | 56.93 | 26.1 | 30.6 | 22.6 | 83.5 | SW, NE | 3.6 | 7 | Ci.-S. | S.-Cu. W | ------ | ϟ a. Ω a. p. ⌈ϟ °p. |
| 30 | 55.57 | 25.8 | 27.5 | 23.5 | 81.7 | SW quad. | 7.9 | 9.5 | Ci.-S. | Cu.-N., N. W, WSW | .6 | Ω a. ● d p. |
| Mean | 758.39 | 27.3 | 31.6 | 23.8 | 77.7 | ------------ | 6.5 | 5.9 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 134.5 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h* | *0–10.* | | | | | *mm.* | |
| 1 | 758.48 | 27.5 | 32.7 | 25 | 80.3 | SE | 6.2 | 8.7 | A.-Cu. | ESE | Cu. | | 0.5 | ● a. ⛈ d p. ϟ |
| 2 | 59.39 | 26.5 | 31 | 24 | 83.5 | Variable | 5 | 8.8 | Ci.-S. | | Cu. | | 14.2 | ϟ ●° a. ⛈ ● p. |
| 3 | 59.56 | 25.5 | 32.6 | 23.1 | 86.5 | E,NW | 4.6 | 6 | Ci.,Ci.-S. | | Cu. | ENE | 12.5 | ⛈ ● p. |
| 4 | 59.26 | 26.7 | 32.1 | 23.2 | 81.3 | NNE | 7.9 | 7.3 | Ci.-S. | | Cu. | NE | 3.3 | ⛈ ● ⍦ ϟ ⊤ p. |
| 5 | 58.46 | 27 | 31.4 | 23.7 | 79 | NE quad. | 8.7 | 7.5 | Ci.-S. | | Cu. | | ------ | ϟ p. |
| 6 | 57.80 | 27.3 | 32.1 | 23.3 | 79.8 | N | 10.1 | 6 | Ci. | | Cu. | NE | ------ | ϟ a. p. ⊤ d p. |
| 7 | 57.82 | 28.4 | 34.1 | 23.9 | 74 | Variable | 7.4 | 4.3 | Ci. | | Cu. | | ------ | Ω ϟ a. ⛈ p. |
| 8 | 57.89 | 26.9 | 31.8 | 24.1 | 82.8 | W | 4.3 | 8.3 | Ci.-S. | | Cu. | ENE | 6.4 | Ω d° a. ϟ ⛈ ● p. |
| 9 | 58.56 | 27.7 | 31.5 | 24.3 | 81.2 | SW | 6.3 | 4.2 | Ci | | Cu. | | ------ | ϟ a. p. ⊤ ⛈ p. |
| 10 | 59.10 | 27 | 34.5 | 23.1 | 83.7 | E | 5.2 | 6.5 | Ci.-S. | | Cu.-N. | NE | 25.9 | ϟ a. p. ⊤ ⛈ ● p. |
| 11 | 58.48 | 27.4 | 32.9 | 23 | 83 | ENE | 7.3 | 7.7 | Ci.-S. | | Cu. | NE | 4.1 | ϟ a. p. ● ⛈ p. |
| 12 | 58.28 | 27.1 | 31.5 | 24.5 | 85 | NE | 4.3 | 9.5 | Ci. | SE | Cu.-N. | | 4.9 | ⛈ ● a. ⊤ ●° p. ϟ |
| 13 | 59.04 | 26.7 | 29.6 | 24.2 | 83.7 | SW | 12.5 | 7.8 | A.-Cu. | ESE | Cu. | SW | 28.2 | ● a. p. ⌒ p. |
| 14 | 59.71 | 27.6 | 30.7 | 25 | 79.3 | SW | 10.8 | 6 | A.-Cu. | SW | Cu. | | 1.8 | ● a. |
| 15 | 59.52 | 28.1 | 30.6 | 24.9 | 75.7 | SW | 15.4 | 5.2 | Ci. | | Cu. | | ------ | ϟ p. |
| 16 | 58.72 | 27 | 29.3 | 25.2 | 78.3 | SW quad. | 17 | 8.7 | Ci.-S. | | Cu.-N. | SW | 1.6 | d a. p. ●° p. |
| 17 | 56.68 | 27.8 | 31.6 | 24.8 | 71 | W quad. | 16.7 | 8.7 | Ci.-S | | Cu. | | 22.4 | ● a. p. d ϟ p. |
| 18 | 57.05 | 25.6 | 27.7 | 22.1 | 82.3 | SW | 16.3 | 10 | Ci.-S | | Cu.-N. | | 40.4 | ⛈ a. ● a. p. d p. |
| 19 | 58.18 | 24.2 | 28 | 22.1 | 90.3 | SW | 7.8 | 9.7 | Ci.-S | | Cu.,N. | | 47.7 | ● a. p. p p. |
| 20 | 58.46 | 26 | 28.6 | 23.4 | 85.5 | SW | 7.4 | 7.7 | Ci.-S | | Cu. | | 3.3 | ● a. ϟ p. |
| 21 | 59.36 | 26.9 | 31.6 | 23.5 | 78.7 | SW | 5.2 | 5.8 | A.-Cu. | | Cu. | | ------ | |
| 22 | 60.48 | 26.9 | 30.9 | 23 | 79.3 | SW | 4.6 | 3.8 | Ci. | | Cu. | | ------ | Ω° a. ⊤ ϟ p. |
| 23 | 60.40 | 26.2 | 31.3 | 23.1 | 83.5 | SW | 5.2 | 4.5 | Ci., Ci.-S. | | Cu. | NE | 0.8 | ϟ ⛈ a. p. ●° ⌒ p. |
| 24 | 58.95 | 26.4 | 31.6 | 23 | 85 | SW | 5.9 | 5.7 | Ci. | | Cu. | | ------ | Ω a ⊤ ⛈ ϟ p. |
| 25 | 57.72 | 26.6 | 30.5 | 23.7 | 85.5 | SW | 11 | 6.5 | Ci. | | Cu. | SW | 22.6 | Ω° ◯ a. ϟ p. |
| 26 | 58.12 | 26.4 | 29.5 | 22.2 | 81.8 | SW | 14.5 | 7.8 | Ci., Ci.-S. | | Cu. | | ------ | ≡ ● a. ϟ p. |
| 27 | 58.06 | 26.4 | 28.4 | 24.6 | 83.7 | SW | 13 | 5.8 | Ci., Ci.-Si | | Cu. | | 1.3 | ⊤ ● a. |
| 28 | 58 | 26.8 | 29.7 | 24.3 | 84 | SW | 11.4 | 5.5 | A.-Cu. | W | Cu. | | ------ | ⛈ ϟ p. |
| 29 | 57.11 | 26.5 | 30.7 | 23.1 | 83 | SW, W | 7.3 | 6.2 | Ci.,Ci.-S. | | Cu. | | 1.6 | Ω² a. ●° ⊤ p. |
| 30 | 55.78 | 25.2 | 27.1 | 23.6 | 86.3 | SW | 13.2 | 8.3 | Ci.-S. | | Cu.-N. | | 10.4 | ≡° a. p. d° ● p. |
| Mean | 758.48 | 26.7 | 30.9 | 23.7 | 81.9 | ------------ | 9.1 | 7 | ------------ | | ------------ | | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | | ------------ | | 253.9 | |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | | | *mm.* | |
| 1 | 758.86 | 26.4 | 29.9 | 22.5 | 80.2 | Variable | 5.4 | 8 | A.-Cu. | E by S | Cu.-N. | | -------- | d ≡° a. ϟ p. |
| 2 | 59.48 | 25.2 | 29.5 | 21.8 | 84.5 | N quad. | 3.8 | 8.7 | Ci.-S. | | S.-Cu. | E | -------- | Ω° a. ⍦ p. |
| 3 | 59.65 | 24.5 | 30.2 | 21.9 | 91.7 | N | 5.3 | 6.7 | A.-Cu. | E | Cu.-N. | E | 4.3 | ≡ d ⛈ ϟ ⊤ p. |
| 4 | 59.30 | 25.6 | 31 | 22.6 | 89 | N | 5.2 | 5.8 | A.-Cu. | E | Cu.-N. | ENE | -------- | ≡° a. |
| 5 | 58.82 | 25.4 | 30.8 | 21.5 | 87.7 | N | 5.9 | 7.2 | Ci.-S. | | Cu.-N. | E | 5.6 | Ω° a. d ⊤² ϟ p p. |
| 6 | 58.12 | 26.2 | 31.6 | 22.3 | 84.8 | N, SW | 5.5 | 6.3 | Ci.-S. | E | Cu. | E | 1.8 | Ω° ≡° d a. ⊤ ϟ p. |
| 7 | 57.98 | 25.8 | 31.6 | 21.8 | 86 | N | 5.9 | 4 | Ci. | | Cu. | E | 2 | Ω° a. d ϟ p. |
| 8 | 58.07 | 25.9 | 31 | 21.6 | 86.5 | N, S | 6.1 | 4.2 | A.-Cu. | E by S | Cu. | SE | -------- | Ω° p a. ϟ p. |
| 9 | 58.74 | 25.6 | 31.5 | 22.3 | 86 | N | 5.3 | 4.3 | Ci.,Ci.-S. | | Cu.-N. | E | 4.8 | Ω a. ⛈ d ϟ p. |
| 10 | 59.28 | 24.4 | 30.6 | 22.1 | 93.3 | N | 5.1 | 5.7 | Ci.-S.,Ci. | | Cu. | NE | 32.5 | Ω° a. ⛈ ● p. |
| 11 | 58.53 | 25.2 | 30.4 | 21.4 | 91.2 | N | 5 | 6.7 | Ci.-S. | | Cu.-N. | ENE | 13.2 | Ω ≡ ● ⊤ ϟ ⍦° |
| 12 | 58.41 | 25 | 30.4 | 22.5 | 92.2 | N quad. | 3.8 | 9 | Ci.-S. | | Cu.-N. | | 7.8 | Ω° ≡° d ⊤² ⍦° |
| 13 | 59.10 | 25.2 | 30.2 | 22.2 | 91 | N | 8 | 8.8 | Variable | | Cu. | W | 17.8 | ⌒ a. d a. p. ⛈ p. |
| 14 | 59.76 | 26.3 | 30.5 | 22.2 | 85.7 | S | 5.5 | 7.8 | A.-Cu. | SW | Cu.-N. | | -------- | ≡° a. |
| 15 | 59.42 | 27.3 | 32.1 | 22.7 | 82.7 | N | --------- | 7 | Ci. | | Cu.,Cu.-N. | W | -------- | Ω° ≡° a. ϟ ⊤ p. |
| 16 | 58.30 | 26.5 | 30.4 | 23.8 | 87.2 | SW quad. | --------- | 8 | Ci.-S. | | Cu.-N. | W | 1.3 | ≡° a. d a. p. ↙° p |
| 17 | 57.10 | 26.8 | 30.9 | 22.8 | 82.7 | Variable | --------- | 8.3 | Ci.-S. | | Cu.-N. | W | 3.8 | d ⛈ ϟ p. |
| 18 | 57.44 | 26.8 | 29.8 | 23.9 | 82.5 | S quad. | --------- | 9.8 | Ci.-S. | | Cu.-N. | S | 2.8 | ⛈ d ↙° p. |
| 19 | 58.56 | 27.1 | 31 | 23.8 | 79.2 | SE quad. | 7.9 | 9.2 | A.-Cu. | N | Cu.-N. | | -------- | ϟ p. |
| 20 | 58.62 | 26.6 | 31.7 | 23 | 84.5 | N, S | --------- | 5.8 | Ci.-S. | N, SE | Cu.-N. | | -------- | ≡° a. ϟ p. |
| 21 | 59.49 | 26.5 | 31.2 | 22.6 | 83 | N, S | 4.9 | 6.7 | Ci.-S. | E | Cu.-N. | | -------- | ≡° a. ⊤ ◯° p. |
| 22 | 60.42 | 26.3 | 31 | 22.5 | 83.5 | N | 5.1 | 4.7 | Ci. | | Cu. | E | -------- | Ω° ≡° a. ⊤ ϟ p. |
| 23 | 60.52 | 24.8 | 30.8 | 22.4 | 91.5 | N | 4.1 | 5.8 | A.-Cu. | | Cu.-N. | E | 31 | ●² a. ϟ p p. ⊤ |
| 24 | 59.00 | 25.8 | 30.6 | 22.1 | 87.5 | N quad. | 5.1 | 4.8 | Ci. | | Cu. | E | 4.5 | ≡° a. ⛈ ϟ p. d |
| 25 | 57.84 | 26.5 | 30.2 | 22.9 | 86.7 | Variable | 5.1 | 7.8 | Ci.-S. | | Cu. | SW | 1 | ϟ ≡° ⌒ ⛈ p ⊤ |
| 26 | 58.14 | 26.1 | 29.6 | 22.7 | 86.7 | E quad. | 6.6 | 8.7 | Ci.-S. | | Cu.-N. | SE | -------- | Ω° ≡ ◯° a. ⊤ ◯ p. |
| 27 | 58.02 | 26.3 | 30 | 23.1 | 84.7 | E quad. | 7.3 | 8.2 | Ci.-S | | Cu.-N. | W | -------- | ⊤ a. ⛈ p. |
| 28 | 58.04 | 25.9 | 29.9 | 22.7 | 86.8 | Variable | 4.5 | 8.2 | Ci.-S. | NE | Cu.-N. | | 2.8 | ≡° a. ϟ p. |
| 29 | 57.17 | 25.4 | 28 | 23 | 90.8 | N | 4 | 10 | Ci.-S. | | Cu.-N. | W | 31.1 | ≡ d² a. ϟ p. |
| 30 | 55.69 | 25 | 27.2 | 23 | 91.3 | Variable | 10.9 | 10 | Ci.-S. | | N. | WSW | 18.8 | ● a. p. |
| Mean | 758.60 | 25.9 | 30.5 | 22.5 | 86.7 | ------------ | 5.7 | 7.2 | ------------ | | ------------ | | -------- | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | | ------------ | | 186.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 759.76 | 26.3 | 29.5 | 23.3 | 87.2 | SSE | 0.8 | 8 | Ci.-Cu. SW | N. SE | 16.7 | ● a. p. |
| 2 | 60.11 | 26.5 | 31 | 24.4 | 87.8 | NW | .3 | 7.7 | Ci. SW | Cu.-N. NW | 6.4 | ● a. |
| 3 | 60.25 | 27 | 32.4 | 23.8 | 86.2 | N quad. | .5 | 7.3 | Ci.-S. SW | Cu.-N. E | 13.2 | ● ᗜ² p. |
| 4 | 59.96 | 26.8 | 32.8 | 23.8 | 84.8 | SSE | .3 | 7.5 | Ci.-S. SW, S | Cu. E | 5.8 | ● a. p. |
| 5 | 59.44 | 27.2 | 31.5 | 24.2 | 83.8 | NW | .7 | 6.8 | Ci. SW | Cu. E | 24.8 | ○² a. p. ● ψ² p. |
| 6 | 58.97 | 27.1 | 31.5 | 24 | 86 | S | .7 | 6.8 | Ci.-Cu. SW | Cu. E | ------ | ● a. |
| 7 | 58.66 | 27.4 | 33 | 24.4 | 85.2 | NNW, SE | .3 | 3.3 | Ci. | Fr.-Cu., Cu.-N. E | ------ | Ω² a. ⌒ p. |
| 8 | 58.69 | 28 | 33.4 | 24.6 | 82 | S | .5 | 4.2 | Ci.-S. SW | Cu. E | 2 | Ω² a. ● p. |
| 9 | 59.30 | 28.5 | 34 | 24.6 | 82.5 | E | .7 | 4.3 | Ci.-S. SW | Cu. ENE | ------ | Ω² a. p. |
| 10 | 59.78 | 26.8 | 34.3 | 24.4 | 88.5 | NW quad. | .7 | 5 | Ci.-S. SW | Cu. ENE | 4.6 | Ω² a. ● p. |
| 11 | 59.27 | 27.7 | 33 | 24.9 | 86 | E | .8 | 6.7 | Ci.-S. SSW, SW | Cu. E | 1.5 | ● ᗜ² p. |
| 12 | 58.90 | 27.1 | 30.7 | 24.2 | 86.7 | N, ESE | .7 | 8.2 | Ci.-S. SW | Cu.,N. E | 2 | ● a. ⊤ ψ² ᗜ² p. |
| 13 | 59.25 | 27.3 | 34 | 24 | 86.7 | NW quad. | 1 | 8.2 | Ci.-S. SW | Cu. NWbyW, NW | 32.5 | ●² ℾ² p. |
| 14 | 59.93 | 27.4 | 31.8 | 23.6 | 82.7 | WNW | 1 | 7.7 | A.-Cu. NW | Cu.-N. WNW | ------ | |
| 15 | 59.56 | 28.4 | 32 | 24.3 | 76.8 | WNW | 1.3 | 5.3 | Ci. SW | Cu. WNW | ------ | Ω a. ○² a. p. |
| 16 | 58.09 | 28.1 | 32.8 | 24.8 | 78.8 | NW quad. | .7 | 6.8 | Ci. SW | Cu.-N, Cu. W quad. | 8.9 | ᗜ² a. ● p. |
| 17 | 57.10 | 27.6 | 32 | 23.8 | 80.8 | Variable | .3 | 8.2 | Ci., Ci.-Cu. SW | Cu. WNW | 5.3 | ᗜ² a. ● ℾ p. ○² |
| 18 | 57.45 | 27 | 33 | 23.6 | 84.5 | S quad. | .3 | 8.8 | A.-S. Ci. | N., Cu.-N. WNW | 4.6 | ᗜ² ψ² ○² a. ● p. |
| 19 | 58.70 | 27.3 | 31.8 | 24.2 | 83.7 | SbyE | .8 | 8.8 | Ci. E | Cu. W, WSW | ------ | |
| 20 | 59.24 | 28.2 | 33.3 | 24 | 78.5 | SSE | .7 | 7.5 | Ci.-S. NE | Cu. SE | ------ | d° ϟ ⌒² p. |
| 21 | 60.07 | 28.1 | 32.4 | 25 | 80.2 | SE | .7 | 6.3 | Ci., Ci-S. N | Cu. SE | ------ | Ω² p. |
| 22 | 61.01 | 27.1 | 33.6 | 23.8 | 85.8 | Variable | .3 | 3.2 | Ci.-S. | Cu. ESE, SE | 1 | Ω² a. p. ●° ℾ ϟ p. |
| 23 | 60.84 | 27.2 | 33 | 24 | 87.5 | WNW | .3 | 4.2 | | Cu. E | 2 | Ω² a. ● ℾ p. ϟ |
| 24 | 59.38 | 27.2 | 33 | 23.7 | 85.3 | ENE | .3 | 4.8 | Ci.-S. W | Cu. NE | ------ | Ω² a. ϟ p. |
| 25 | 58.11 | 27.2 | 34 | 23.7 | 86.2 | Variable | .5 | 7.3 | Ci. N | Cu.-N. SE | 12.2 | ϟ ○° a. ○² ● ℾ p. |
| 26 | 58.35 | 26.9 | 31.5 | 24 | 81.8 | NNW, N | 1 | 7.8 | Ci. N | Cu.-N. ESE | ------ | ● ℾ ○² a. ⊤ ϟ p. |
| 27 | 58.33 | 25.9 | 33.8 | 23 | 85.5 | NNW | .7 | 8.2 | Ci. N | Cu., N. ESE, NE | 13.8 | ○² a. ϟ ↙° ● ℾ p. |
| 28 | 58.38 | 26.8 | 33.9 | 23.8 | 85.2 | NW | .2 | 5.8 | Ci.-S. N | Cu. NW | 1.3 | ϟ a. ● ⊤ Ω² p. |
| 29 | 57.29 | 26.7 | 30.2 | 24.3 | 85.3 | N quad. | .7 | 7.7 | Ci. | Cu.-N. NW | 10.2 | Ω² a. d p. |
| 30 | 55.57 | 24.7 | 27.4 | 23 | 90.8 | W, S | .8 | 10 | | N. W quad. | 14.7 | d ● a. p. |
| Mean | 758.99 | 27.2 | 32.4 | 24 | 84.4 | ------ | .6 | 6.7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 183.5 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.67 | 27.2 | 34.4 | 23.6 | 85.8 | SE quad. | 4.4 | 8.8 | Ci.-S. | N. SE | 6.7 | ϟ d ● ℾ a. p. |
| 2 | 59.34 | 27 | 32.6 | 23.6 | 87.8 | NE quad. | 2.9 | 8 | Ci.-S. | Cu. NE | ------ | ⊤ a. p. ϟ ᗜ° ψ° p. |
| 3 | 59.52 | 27 | 34.2 | 23.4 | 86.3 | Variable | 4.2 | 7.5 | Ci.-S. | N. NE | 9.2 | ⊤° ● ℾ ϟ p. |
| 4 | 59.53 | 27.2 | 33.5 | 22.9 | 85.3 | NE | 3.9 | 7.8 | Ci.-S. | Cu.-N., Cu. NE | 10.4 | ⊕° ○° ϟ ● ᗜ p. |
| 5 | 58.71 | 27.2 | 33.9 | 23.3 | 84.7 | NE | 4.9 | 8 | Ci.-S. | Cu. NE | 15.3 | ● a. p. ℾ ᗜ ϟ p. |
| 6 | 58.09 | 27.6 | 33.2 | 24 | 85.3 | NE | 4.7 | 8 | Ci.-S. | N. NE | 19.8 | ● ℾ a. p. ᗜ ϟ p. |
| 7 | 57.71 | 28.1 | 34 | 24.6 | 84 | NE quad. | 4.8 | 5.8 | Ci. | Cu. NE | 47.3 | ● a. p. ᗜ ϟ p. |
| 8 | 57.78 | 28.1 | 34 | 24 | 83 | NE | 4.7 | 7 | Ci. | N. S, E | 13.7 | ⊤ a. p. ᗜ° ℾ ● p. |
| 9 | 58.48 | 27.4 | 33.8 | 24 | 87.3 | SW quad. | 2.6 | 5 | Ci.-S. | Cu. NE | 4.8 | ● a. ⊤° ᗜ ϟ p. |
| 10 | 59.07 | 28.2 | 33.7 | 24.5 | 81.3 | SSW, N | 4.4 | 5.8 | Ci. | Cu., Cu.-N. NE | 14.2 | ● a. ϟ ℾ p. |
| 11 | 58.70 | 28.4 | 33.8 | 24.8 | 84.3 | NE | 5.2 | 7.8 | Ci.-S. | Variable E | 3.6 | ● a. ϟ ᗜ ψ p. ⊤° |
| 12 | 58.30 | 27.2 | 33 | 24.5 | 87.7 | S quad. | 3.5 | 8.7 | Ci.-S. S | N. NE | 11.2 | ⌒ a. ℾ ϟ p. ● |
| 13 | 58.78 | 26.8 | 33.7 | 24.3 | 87.8 | SE quad. | 6 | 8.5 | Ci.-S. | Cu., N. S, W | 32.6 | ●° a. ● ℾ ϟ p. |
| 14 | 59.58 | 27 | 33.4 | 24 | 85 | Variable | 5.1 | 7.5 | Ci.-S., A.-Cu. | N. NE | ------ | ●° a. ⊤ p. |
| 15 | 59.44 | 28.4 | 35.3 | 24.1 | 76.8 | W quad. | 6.2 | 6.5 | Ci. N | Cu. W, SW | ------ | ⊕° ○ a. ϟ p. |
| 16 | 58.07 | 27.2 | 34.2 | 24,7 | 81.2 | S | 6.6 | 8 | Ci.-S. | N. NW | ------ | ⊤° p. |
| 17 | 56.64 | 27.3 | 34.5 | 23.5 | 81 | SW quad. | 6 | 6.8 | Ci.-S. | Fr.-N. SW | ------ | ϟ p. |
| 18 | 56.85 | 26.8 | 32.2 | 24.2 | 83.5 | S quad. | 6 | 9.2 | Ci.-S. | N. SW | 5.4 | ϟ ψ ⊕° ○° ●° |
| 19 | 57.85 | 25.6 | 32.8 | 23.6 | 87.7 | SW quad. | 7.5 | 10 | Ci.-S. | N. W | 8.9 | ⊤° ● p. |
| 20 | 58:27 | 26.9 | 32.5 | 23.4 | 85 | S quad. | 6.4 | 7.2 | Ci.-S. | N. S | ------ | ϟ° p. |
| 21 | 59.49 | 27.6 | 34 2 | 23.7 | 82.3 | SSE, SE | 5.2 | 6.7 | Ci. NE | Cu., Fr.-N. SE, S | ------ | ⊕° ○° a. ℾ d° p. |
| 22 | 60.52 | 27.5 | 33.9 | 23.4 | 83.3 | SE | 3.3 | 4.8 | Ci. E | Cu. SE | .8 | ℾ° a. ●° ϟ p. |
| 23 | 60.32 | 27.9 | 33.9 | 24.2 | 81 | NW, S | 4 | 5.2 | A.-Cu. SW | Cu. NW | ------ | ⊤° a. ϟ p. |
| 24 | 59.11 | 27.4 | 34.2 | 23.3 | 81.3 | SSE, NW | 3.9 | 6.5 | Ci., Ci.-S. | Fr.-N. E | ------ | ϟ p. |
| 25 | 57.69 | 27.1 | 34 | 24.4 | 84.2 | S | 5.4 | 6.2 | Ci. NE | N. SW, SE | .3 | ⊤° ℾ d ϟ p. |
| 26 | 57.79 | 27 | 32.8 | 23.4 | 82.8 | S quad. | 5.3 | 7.8 | Ci.-S. | N.-cf. SW, NW | .5 | ⊤° ℾ ●° ϟ p. |
| 27 | 57.92 | 26.8 | 34.4 | 23.5 | 85 | S | 4.2 | 7.5 | Ci., Ci.-S. | N., Cu. S | ------ | ℾ d° ϟ p. |
| 28 | 58.03 | 26.7 | 34.2 | 23.8 | 85.8 | SSE | 3.6 | 6.8 | A.-Cu., S. S | N. S, W | ------ | d° ⊤° ϟ p. |
| 29 | 57.12 | 28 | 32.6 | 22.7 | 86.8 | Variable | 2.5 | 6.2 | Ci.-S. NE | Cu. | ------ | |
| 30 | 55.66 | 25 | 28.8 | 23.3 | 92.2 | SW | 4.3 | 10 | Ci.-S. | N. | 11.7 | ϟ° a. ●° a. p. |
| Mean | 758.43 | 27.3 | 33.5 | 23.8 | 84.5 | ------ | 4.7 | 7.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 216.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 759.09 | 26.1 | 29.7 | 23.8 | 86.3 | SE quad. | 0.8 | 7.3 | A.-Cu. E | S.-Cu SE | 1.8 | d° a. ϟ p. |
| 2 | 59.56 | 26.4 | 30.3 | 22.7 | 85.3 | Variable | .7 | 7.3 | A.-Cu. SE | S.-Cu. E | ------ | |
| 3 | 59.66 | 25.4 | 31.4 | 22.8 | 89.2 | N | .8 | 5 | Ci.-S. | Cu., Fr.-N. E, SE | 3.8 | d ⛈ ⌣ p. |
| 4 | 59.49 | 26.5 | 32.2 | 22.2 | 84.8 | Variable | .7 | 5.2 | Ci. E | Cu. E | 9.1 | ● ϟ p. |
| 5 | 58.95 | 25.9 | 31.9 | 22.8 | 88.3 | N | .8 | 6.2 | Ci.-S. | S.-Cu. ENE | 9.1 | ●° T° ⌣ p. |
| 6 | 58.22 | 26.4 | 31.9 | 22.8 | 85.8 | Variable | .7 | 6.2 | Ci.-S. SE | S.-Cu. E | 6.1 | d° ●° T° ϟ p. |
| 7 | 58.20 | 25.6 | 30.9 | 23 | 90.7 | N | .8 | 4.3 | Ci.-S. | S.-Cf. NE | 6.6 | ⛈ ●° ⌣ p. |
| 8 | 58.14 | 26 | 32.3 | 22.8 | 88 | Variable | .5 | 3.3 | Ci.-S. | Cu. ENE | ------ | ϟ a. T d ⊕ p. |
| 9 | 58.74 | 25.8 | 32 | 22.9 | 89.2 | Variable | .5 | 2.8 | Ci. | Cu E | .8 | ⌓ a. T d° ⊕ ϟ p. |
| 10 | 59.28 | 26.2 | 33 | 23.1 | 89.8 | NE | .7 | 4.3 | Ci.-S. | S.-Cf. NE | 21.8 | ⌓ a. ● ⛈ ∩ ⊕ p. |
| 11 | 58.89 | 26.4 | 32.2 | 23.4 | 87.8 | ENE | .5 | 5.5 | A.-Cu. E | S.-Cu. ENE | 5.1 | ⛈ p° d° T ⊕ p. |
| 12 | 58.44 | 25.4 | 31.6 | 23.1 | 90.7 | S, N | .6 | 6 | Ci.-S. | N. ENE | 2.5 | ⊕ a. ⛈ T ●° ⌣ p. |
| 13 | 58.66 | 26.8 | 32.6 | 22.7 | 84.7 | SW quad | 1.2 | 6.3 | Ci.-S. NE | Cu. SW | 12.7 | ⌣ a. ϟ p. |
| 14 | 59.46 | 27.1 | 31.6 | 23.5 | 85.7 | W quad. | 1 | 6.5 | A.-Cu. | S.-Cu. W | ------ | ●° a. |
| 15 | 59.04 | 28.6 | 32.8 | 24.2 | 79.5 | W | 1.5 | 5.3 | Ci.-S. | S.-Cu. W, WSW | ------ | ⌣ p. |
| 16 | 57.52 | 28.2 | 31.5 | 26 | 80.2 | WSW | 1.5 | 6.8 | Ci.-S. | S.-Cu. W | 2 | ⌣ a. p° p. |
| 17 | 56.43 | 28 | 30.5 | 26.7 | 79.1 | SW | 2 | 7 | A.-Cu., Ci.-S. | S.-Cu. SW quad. | ------ | ϟ p. |
| 18 | 56.83 | 27.8 | 31.1 | 26.1 | 79.2 | SW | 2.7 | 7.7 | Ci.-S. | S.-Cu. SW | 1 | ⌣ a. |
| 19 | 57.89 | 27.8 | 31.5 | 24.6 | 79.9 | SW | 1.3 | 9 | A.-Cu. SE | Fr.-N. SW | ------ | d° a. |
| 20 | 58.49 | 27.7 | 32.4 | 23.9 | 82.2 | S, NW | .8 | 7.8 | Ci.-S. N, NNE | S.-Cu. S | 20.8 | ϟ a. p. ⛈ ●$^2$ p. |
| 21 | 59.44 | 27.5 | 32.2 | 23.6 | 84.8 | SSE | .5 | 6.8 | A.-Cu. SE | S.-Cu. SE | ------ | |
| 22 | 60.38 | 26.6 | 32.6 | 23.7 | 85.5 | Variable | .7 | 4.3 | Ci.-S. | S.-Cu. E | 1.8 | T d$^c$ ϟ p. |
| 23 | 60.26 | 26.5 | 32.7 | 23.1 | 87.2 | Variable | .7 | 4.2 | Ci.-S. | Cu. NNE | ------ | ϟ a. p. T d p. |
| 24 | 58.79 | 26.5 | 33 | 22.9 | 85.2 | N | .8 | 3.5 | Ci.-S. E | Cu | ------ | ⌓ a. T ⛈ ϟ p. |
| 25 | 57.50 | 27.4 | 32.7 | 22.7 | 83.3 | SW | 1.3 | 5 | Ci.-S. E | S.-Cu. SW | ------ | ϟ a. p. |
| 26 | 57.78 | 27.6 | 31.8 | 24.6 | 79.3 | SW | .8 | 7.2 | A.-Cu., Ci.-S. | S.-Cu. SW | ------ | T ϟ a. |
| 27 | 57.70 | 28.4 | 32.4 | 24.8 | 77.3 | SW | 1.5 | 7 | A.-Cu. NE | S.-Cu. SW | ------ | |
| 28 | 57.83 | 28 | 32.8 | 24.5 | 82.2 | SW | .7 | 6.8 | Ci.-S. E | S.-Cu. SW, WSW | ------ | ϟ a. p. |
| 29 | 56.70 | 26.5 | 29.9 | 23.7 | 87.8 | Variable | .5 | 8.8 | Ci.-S. | S.-Cu. WNW | 43.2 | ϟ a. p. |
| 30 | 54.59 | 25.1 | 26.6 | 23.7 | 92.8 | WSW | 2.3 | 10 | A.-Cu. | N. W | 84.4 | ϟ ● a. ↙° ●$^2$ p. |
| Mean | 758.40 | 26.8 | 31.7 | 23.7 | 85.1 | ------------ | 1 | 6.1 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 232.6 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.78 | 28.7 | 34.7 | 24.1 | 75.5 | Variable | --------- | 5.2 | Ci.-S., A.-Cu. | Cu. E, ESE | ------ | ϟ° p. |
| 2 | 59.52 | 27.3 | 34.1 | 22.7 | 81.8 | ENE | --------- | 6.5 | Ci.-S. | Cu. E | 2.3 | T a. ● p. |
| 3 | 59.53 | 28.5 | 35.4 | 22.7 | 79 | NE | 5 | 2.5 | Ci. | Cu. E | 2 | ϟ° p. |
| 4 | 59.48 | 28.5 | 35 | 23 | 77.5 | NE | --------- | 3.5 | Ci. W | Cu. | ------ | ϟ° p. |
| 5 | 59.15 | 28.5 | 34.7 | 23.8 | 79.5 | NE | --------- | 3.8 | Ci.-S., Ci. | Cu. ENE | 4.8 | ● a. ϟ p. |
| 6 | 58.59 | 28 | 34.6 | 23.2 | 80.7 | NE | 7.9 | 3.2 | Ci. | Cu. E | 3.3 | ϟ° p. |
| 7 | 58.29 | 28.3 | 34.4 | 23.5 | 79.7 | NNE | 6.6 | 3.8 | Ci. | Cu. E | 1.5 | ●° a. p. |
| 8 | 58.05 | 28.4 | 33.8 | 22.9 | 79.3 | NE quad. | 6.2 | 1.8 | Ci. | Cu. | ------ | ≡° a. ϟ p. |
| 9 | 58.92 | 28.2 | 35.1 | 23 | 81.7 | NE | 6.6 | 1.7 | Ci., A.-Cu. | Cu. | 11.9 | ≡° a. ● p. |
| 10 | 59.61 | 28.9 | 34.4 | 24.1 | 79.5 | NE quad. | 7.7 | 3.8 | Ci. | Cu. ENE, E | 13.5 | ●° a. p. T p. |
| 11 | 58.90 | 27.7 | 32.5 | 23.7 | 82.5 | NE | 5.8 | 6 | Ci.-S. | N. E | 4.4 | ● a. d p. |
| 12 | 58.35 | 28.7 | 34 | 24 | 79.3 | NE | 4.7 | 4.7 | A.-Cu. NE | Cu.-N. ENE | 1 | ●° a. ϟ p. |
| 13 | 58.49 | 27.1 | 33.5 | 23.4 | 84.8 | SSW | 5.3 | 4 | Ci. | Cu. SSW, W | 4.5 | ≡° a. ● ϟ p. |
| 14 | 59.23 | 27.2 | 32.6 | 23.1 | 82.3 | SW | 8.9 | 2.3 | Ci. | Cu. W | ------ | ≡° a. d° p. |
| 15 | 58.70 | 28.4 | 32.7 | 24.4 | 77.8 | WSW | 12.5 | 2.8 | Ci. | Cu.-N., Cu. W | ------ | d a. ϟ p. |
| 16 | 56.94 | 27.4 | 30.7 | 23.5 | 82.2 | WSW | 12 | 7.3 | Ci.-S. | Cu. W | 13.7 | d a. p. ● p. |
| 17 | 55.54 | 27.9 | 32 | 25 | 80 | WSW | 12.9 | 6.3 | Ci.-S. | Cu. W | ------ | ∩ ϟ p. |
| 18 | 55.96 | 26.8 | 30.6 | 23.5 | 84.2 | SW | 12 | 9.5 | Ci.-S. | Fr.-Cu. WSW, SW | 11 | d a. ● T p. |
| 19 | 57.39 | 26.5 | 30 | 23.6 | 83.3 | SW | 7.9 | 9.8 | Ci.-S. | Cu. SW | ------ | d° a. p. |
| 20 | 58.08 | 27.3 | 32.1 | 23.4 | 81.7 | SW quad. | 5.9 | 7.3 | Ci.-S. | Cu. SSW, S | ------ | ϟ p. |
| 21 | 59.34 | 28.2 | 36.2 | 23.5 | 80.3 | SSW, ENE | 3.8 | 4.8 | A.-Cu. S | Cu. SSW | ------ | ≡° a. |
| 22 | 60.60 | 28.2 | 35.5 | 22.9 | 81.5 | E, ENE | 2.9 | 1.2 | Ci. | Cu. | ------ | ≡ a. ϟ p. |
| 23 | 60.26 | 28.4 | 36.2 | 22.5 | 78.7 | SSE, E | 3.3 | 1.2 | Ci. | Cu. | ------ | ≡° a. ϟ p. |
| 24 | 58.67 | 27.7 | 35.7 | 23 | 81.7 | S | 3.1 | 3.5 | Ci., Ci.-S. | Cu. S | ------ | ≡° ϟ° p. |
| 25 | 57.22 | 28.1 | 33.4 | 23.4 | 80 | SW quad. | 6.4 | 2.3 | Ci. | Cu W | ------ | ϟ p. |
| 26 | 57.26 | 27.9 | 33.6 | 23.8 | 79.2 | SW quad. | 10 | 3.3 | Ci. | Cu. SW | ------ | ϟ p. |
| 27 | 57.23 | 27.2 | 32.2 | 24.5 | 82.8 | SW | 10.3 | 4.7 | Ci.-S. | Cu. WSW | 1.1 | ●° a. p. |
| 28 | 57.62 | 27 | 31.4 | 24.4 | 82.2 | SW quad. | 7.3 | 6 | Ci. | Cu.-N. WSW, W | 5.1 | ● ϟ$^2$ p. |
| 29 | 56.67 | 26.6 | 35.6 | 23.1 | 83.5 | NW, WNW | 4.5 | 7.3 | Ci.-S. | Cu.-N. N | 3.6 | ●° d$^2$ p. |
| 30 | 53.74 | 25.1 | 26.4 | 23 | 90 | WSW | 11.9 | 10 | Ci.-S. | N. NW, W | 70.8 | ● a. p. |
| Mean | 758.20 | 27.8 | 33.4 | 23.5 | 81.1 | ------------ | 7.4 | 4.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 154.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.84 | 27.3 | 32.2 | 23.6 | 85 | Variable | 11.7 | 8.2 | Ci.-S. E | S.-Cu. NE, SE | 16.5 | ⛈ ● ϟ p. |
| 2 | 59.50 | 26.8 | 31 | 22.6 | 84.3 | SW | 7.3 | 9.2 | Ci.-S. | S.-Cu. E | ------ | ● ≡ ◯$^2$ a. ⛈° p. |
| 3 | 59.50 | 27.7 | 32.3 | 23.3 | 82 | N quad. | 9.3 | 8 | Ci. SSE | S.-Cu. NE | ------ | Ω° a. ⛈° ϟ° Φ° p. |
| 4 | 59.64 | 28.3 | 32.2 | 23 | 79.8 | SW, N | 13.4 | 7 | Ci. E quad. | Cu. NE, E | ------ | Ω a. ϟ Φ° p. |
| 5 | 59.13 | 29.4 | 32.4 | 26.9 | 75.9 | NE | 14.4 | 6.8 | Ci. E | Cu. NE | ------ | ϟ° a. ϟ Φ$^2$ ψ° p. |
| 6 | 58.52 | 29.2 | 31.4 | 25 | 76.2 | NE | 18.7 | 7.8 | Ci. WSW | S.-Cu. NE | ------ | ϟ a. p. ⛈ Φ° ψ p. |
| 7 | 58.26 | 27.8 | 32.5 | 23.8 | 81.7 | NE | 10.8 | 9.2 | Ci.-S. | S.-Cu. NE | 34.8 | ϟ° a. ⛈ ● Φ° p. |
| 8 | 58.15 | 28.2 | 31.6 | 22.9 | 81.3 | NE, N | 13.7 | 7.5 | A.-Cu. E quad. | S -Cu. NE | .8 | ϟ° a. ⛈° ϟ Φ$^2$ p. |
| 9 | 58.83 | 28.3 | 31.5 | 24.4 | 83 | NE | 10.7 | 7.3 | Ci. | S.-Cu. E | ------ | d$^2$ ⛈° a. ⛈ Φ° p. |
| 10 | 59.65 | 28.2 | 32.3 | 23.9 | 83.5 | NE | 14 | 5 | Ci. | Cu. NE | 3 | ϟ° Ω a. ●° p Φ$^2$ |
| 11 | 59.05 | 29 | 32 | 24.5 | 81.7 | NE | 14.4 | 7.5 | A.-Cu. E | S.-Cu. NE | ------ | ⛈° d$^2$ Φ° Φ$^2$ p. |
| 12 | 58.45 | 28.1 | 30.2 | 23.3 | 78.5 | N quad. | 12.2 | 7.7 | Ci. W | Cu. NE | 1 | ⛈ a. d$^2$ Φ$^2$ ψ° p. |
| 13 | 58.67 | 26.6 | 31 | 22.9 | 86.2 | SW | 7.8 | 8.3 | Ci.-S. | S.-Cu. SE | 3.5 | Ω$^2$ ≡ ◯° ⛈ ●° Φ° |
| 14 | 59.16 | 27.6 | 32.9 | 23.2 | 83.5 | SW | 8.5 | 5 | Ci. E | Cu. W | ------ | d$^2$ d° ◯° a. ϟ p. |
| 15 | 58.61 | 28.4 | 33.7 | 22.1 | 71.3 | SW | 12.2 | 3.3 | Ci. E | Cu. W | ------ | Φ$^2$ a. ϟ° p. |
| 16 | 56.72 | 28.5 | 32.4 | 25.5 | 70.7 | SW | 13.7 | 6.8 | A.-Cu. W | Cu. W | ------ | Φ$^2$ a. d$^2$ ϟ° p. |
| 17 | 55.14 | 28.2 | 32.4 | 24.5 | 73.3 | SW quad. | 16.8 | 9.2 | Ci.-S. | S., Cu. W | ------ | Φ° a. ϟ d$^2$ p. |
| 18 | 55.05 | 27.8 | 32 | 24.5 | 75.8 | SW | 10.7 | 9.2 | Ci. | S.-Cu. SW, W | ------ | ◯° a. ϟ° p. |
| 19 | 56.26 | 26.8 | 29 | 24.4 | 80.3 | SW | 8.9 | 9.5 | Ci.-S. | S.-Cu. SW | 10 | d$^2$ d° a. ● p. |
| 20 | 57.31 | 27.3 | 30.2 | 23.4 | 77.7 | S | 10.1 | 9.5 | Ci.-S. | N. S, SW | 2.5 | Φ° ●° a. ϟ p. |
| 21 | 58.96 | 27.7 | 31.4 | 23.2 | 80.8 | S quad. | 8.2 | 9.2 | Ci.-S. | S. SW | ------ | Ω° a. |
| 22 | 60.31 | 28.5 | 33.6 | 22.8 | 73.7 | SW | 9.3 | 3.3 | Ci. | Cu. SW | ------ | Ω° ≡° a. ϟ° p. |
| 23 | 60.08 | 28.2 | 34.7 | 22.7 | 78.8 | SW | 9.1 | 2 | Ci. | Cu., S | 1 | Ω° a. ϟ° ⛈ ●° p. |
| 24 | 58.41 | 28.5 | 34.1 | 23.3 | 79 | SW | 7.8 | 5.5 | Ci. E | S. NW | ------ | Ω° a. ϟ p. |
| 25 | 56.92 | 27.6 | 33.5 | 22.8 | 81 | SW | 9.5 | 4.3 | Ci. | S.-Cu. SW, W | ------ | Ω$^2$ ◯° a. ⌒° ϟ° p. |
| 26 | 56.80 | 27.8 | 32.7 | 23 | 77.3 | SW | ------ | 7.7 | Ci. E | Cu., S-Cu. W | ------ | ◯° a. ϟ° ϟ p. |
| 27 | 56.94 | 28.7 | 33.4 | 25.1 | 73.7 | SW | ------ | 9.3 | Ci. E | S.-Cu. W | ------ | d° ϟ p. |
| 28 | 57.25 | 28 | 33.9 | 23.4 | 75.7 | SW | 11.1 | 8 | Ci. E | Cu. W | ------ | ϟ° p. |
| 29 | 56.60 | 27.6 | 32.8 | 22.8 | 78 | SW | 9.1 | 7 | Ci.-S. E | Cu. N | ------ | ◯° a. ⌒$^2$ p. |
| 30 | 54.56 | 27.2 | 30.6 | 23.3 | 80.3 | SW | 8.1 | 10 | Ci.-S. E | S.-Cu. NW, N | 10.2 | d$^2$ a. d° ●° p. |
| Mean | 758.04 | 28 | 32.2 | 23.7 | 79 | ------ | 11.1 | 7.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 83.3 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.92 | 27.9 | 32.2 | 24.5 | 86.5 | E | 4.9 | 6.5 | Ci. | Cu. E | ------ | Ω d° a. p. |
| 2 | 59.62 | 27.6 | 33.4 | 24.1 | 85.5 | E | 4.8 | 7.5 | Ci.-S. | Cu. E | ------ | Ω$^2$ ϟ a. d° ψ° p. |
| 3 | 59.70 | 27.9 | 33.2 | 23.5 | 83.5 | E | 6.2 | 5.3 | Ci. | Cu. ESE | 0.5 | Ω$^2$ a. ψ° p. |
| 4 | 59.98 | 27.7 | 32.8 | 23.8 | 85.7 | E, NE | 5.6 | 6.7 | Ci.-S. | Cu. E | 4.1 | ●° a. p. d a. ϟ p. |
| 5 | 59.45 | 28.3 | 33 | 24.5 | 81.3 | ENE | 8.2 | 6.5 | Ci. | Cu. ENE | 19 | ● a. p ⊤ ϟ p. |
| 6 | 58.95 | 27.7 | 32 | 24 | 84.7 | E | 7.6 | 7.3 | Ci.-S., Ci. | Cu. E quad. | 2.3 | ϟ° a. ● a. p. |
| 7 | 58.45 | 28.2 | 32.8 | 24.7 | 83 | E | 6.9 | 6.8 | Ci.-S. | Cu. E | 9.4 | Ω d a. ● ϟ p. |
| 8 | 58.32 | 27.8 | 33 | 24 | 85.5 | E, ENE | 6.4 | 3.3 | Ci. | Cu. E | .5 | Ω$^2$ a. ● ⌒° p. |
| 9 | 59.10 | 28.2 | 33.3 | 24.1 | 83.2 | ENE | 7 | 5 | Variable | Cu. E | 3.5 | Ω$^2$ a. ● ϟ p. |
| 10 | 59.86 | 28.2 | 33.3 | 24.2 | 83.2 | E quad. | 6.2 | 5.5 | Ci. | Cu. E | 2.6 | Ω a. ⌒ ●° a. p. |
| 11 | 59.39 | 27.1 | 30.3 | 24.9 | 89.7 | ENE | 3.6 | 8.7 | Ci.-S. | Cu. E | 8.4 | ● d a. ⊤ a. p. |
| 12 | 58.45 | 28.2 | 32.9 | 24.6 | 83.8 | ENE, E | 5 | 8 | Ci.-S., Ci. | Cu. E | 5.6 | Ω a. ● a. p. |
| 13 | 58.71 | 26.9 | 32.7 | 24.2 | 87.8 | NE, WSW | 4.2 | 8 | Ci.-S. | Cu. E, W | 1.5 | ●° Ω p. |
| 14 | 59.07 | 28.2 | 34.3 | 23.8 | 84.8 | SW quad. | 5.1 | 3.7 | Ci. | Cu. W | 5.3 | Ω$^2$ a. d° ● Ω p. |
| 15 | 58.42 | 29.2 | 35 | 25 | 75.3 | SW quad. | 12.2 | 3.3 | Ci. | Cu. SW | ------ | Ω a. |
| 16 | 56.38 | 28.8 | 33.4 | 25.3 | 77.2 | SW | 15.7 | 5.8 | A.-Cu. WNW | Cu. WSW | ------ | ϟ p. |
| 17 | 54.65 | 28.7 | 33.6 | 25.8 | 76.2 | SW | 17.8 | 9 | Ci.-S. | Cu. SW | ------ | ψ ◯ a. ϟ p. |
| 18 | 54.86 | 28 | 33.8 | 24.8 | 81.7 | SW | 8.2 | 8.7 | Ci.-S. | S.-Cu. S, SW | 19 | ◯° a. ● ⊤ ϟ p. |
| 19 | 56.32 | 26.5 | 30.2 | 24.9 | 85.7 | SW | 7.7 | 10 | Ci.-S. | Cu., S-Cu. SSW | 2.3 | d p. |
| 20 | 57.42 | 27.4 | 32.2 | 24.1 | 82.2 | SSW | 5.3 | 8.7 | Ci.-S. | Cu., S-Cu. SSW | ------ | ⊕° a. |
| 21 | 59.06 | 28.2 | 35 | 23 | 78.2 | SSW | 5.2 | 6.5 | Ci., Ci.-S. | Cu. SW quad. | ------ | Ω$^2$ a. |
| 22 | 60.46 | 27.8 | 33.7 | 22.9 | 81.3 | NNE | 4.6 | 2.8 | Ci. | Cu. S | ------ | Ω$^2$ a. d° p. |
| 23 | 60.32 | 28.4 | 34.2 | 23.9 | 79.7 | NE | 4.1 | 1.8 | Ci. | Cu. SW | ------ | Ω a. ϟ p. |
| 24 | 58.61 | 28.6 | 34.3 | 24.2 | 79.8 | NNE | 4 | 4.2 | Ci. | Cu. NNE | ------ | Ω a. ⊤ p. |
| 25 | 56.78 | 29.2 | 35.5 | 24.6 | 76.8 | SW | 7.8 | 4 | Ci. | Cu. SW | ------ | Ω° a. ϟ p. |
| 26 | 56.64 | 28.6 | 33.8 | 25.7 | 79 | SW | 12.1 | 7.7 | Ci.-S. | Cu. SW | ------ | ⊕ a. ϟ p. |
| 27 | 56.70 | 29.2 | 34.9 | 26 | 76 | SW | 11.9 | 9.5 | Ci.-S. | Cu. SW, WSW | ------ | ϟ p. |
| 28 | 57.20 | 28.4 | 35.7 | 25.4 | 81 | SW | 7.7 | 6.2 | Ci.-S. | Cu. SW | 21.6 | ϟ a. p. ⊤ ● p. |
| 29 | 56.63 | 27.8 | 32.8 | 24.2 | 83.3 | W, NNW | 5.1 | 5.7 | Ci.-S. | Cu. WNW | 11.2 | Ω$^2$ a. d p. |
| 30 | 54.37 | 25.6 | 29.8 | 24 | 92.2 | SW quad. | 7.4 | 9 | Ci.-S. | S.-Cu. NNW | 98.8 | ϟ ● Ω a. ●$^2$ p. |
| Mean | 758.09 | 28 | 33.2 | 24.4 | 82.5 | ------ | 7.3 | 6.4 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 215.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[φ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 758.64 | 27.5 | 33.6 | 24 | 84.2 | SSE, NW | 1.7 | 7.5 | Ci.-S. NE | N. E | 0.3 | d a. p. ⚡ p. |
| 2 | 59.16 | 28 | 32.2 | 23.7 | 76.8 | SSE | 1.7 | 7 | Ci.-S. NE | Cu. ESE | ------ | Ω ○° a. ○ ⚡ p. |
| 3 | 59.38 | 28.2 | 34.1 | 23.4 | 77 | SE | 1.3 | 6.3 | Ci.-S., Ci. | Cu. SE | ------ | ⚡ a. ⊤ ⚡ ⋓$^2$ p. |
| 4 | 59.51 | 28.4 | 33.5 | 23.5 | 75.2 | E quad. | 2 | 5.5 | A.-Cu. E | Cu E quad. | ------ | Ω$^2$ ≡ a. ⋓$^2$ ⚡ p. |
| 5 | 59.23 | 27.9 | 32.2 | 23.8 | 76.2 | E quad. | 2 | 6.8 | A.-Cu. ESE | Cu. E | ------ | Ω a. d° ⚡ p. |
| 6 | 58.60 | 27.8 | 32.8 | 23.5 | 73 | NE, ESE | 2.7 | 6.5 | A.-Cu. ESE | Cu. E | .8 | ⛈ Ω a. ⚡ d p. |
| 7 | 58.21 | 28 | 32.4 | 23.2 | 75.6 | E quad. | 2 | 7 | Ci.-S. SE | Cu. E | ------ | ⊕° ⚡ p. |
| 8 | 57.76 | 28.5 | 34 | 23.4 | 74.3 | ESE | 2.3 | 5.2 | Ci.-S. SE | Cu. E | ------ | Ω a. p. ⚡ p. |
| 9 | 58.61 | 28.8 | 33.9 | 24.5 | 76.7 | ESE, NNW | 2 | 5.8 | Ci.-S., Ci. SE | Cu. E | ------ | Ω a. ⊤ Φ$^2$ ⚡ p. |
| 10 | 59.46 | 28.8 | 34.6 | 24 | 73.7 | ESE | 1.8 | 5.7 | Ci.-S., Ci. | Cu. E | ------ | Ω a. ⚡ p. |
| 11 | 59.12 | 28.4 | 33.6 | 24 | 74.5 | ESE, NE | 1.8 | 6.7 | Ci.-S. SE | N., Cu. E | .8 | Ω d$^2$ a. |
| 12 | 58.22 | 28.6 | 33.4 | 23 | 71 | ESE | 1.8 | 6.2 | Ci.-S. SE | S.-Cu. E | ------ | Ω a. ⚡ p. |
| 13 | 58.08 | 28.8 | 35.4 | 23.5 | 76.5 | SE quad. | 1.7 | 7 | Ci.-S. ESE | Cu. E | 1.3 | Ω° a. ⛈ ⋓° p. |
| 14 | 59.12 | 28.5 | 32.6 | 24.2 | 76.7 | SSW, SSE | 2.3 | 5.5 | Ci. | Cu. SSW | ------ | Ω a. ⚡ p. |
| 15 | 58.84 | 28.2 | 34 | 23.9 | 78.7 | SW | 1.7 | 5.8 | Ci. NE | Cu., N. SW | .5 | Ω a. d ⌒$^2$ ⚡ p. |
| 16 | 57.12 | 27.3 | 32.4 | 24 | 82.8 | SW | 2 | 7.7 | Ci.-S. | N. WSW | .3 | ⊤ d° ⚡ p. |
| 17 | 55.33 | 27.8 | 34.2 | 23 | 78.2 | SW | 1.7 | 8.2 | Ci.-S. N | Cu. W, WSW | ------ | ⊤ p. |
| 18 | 54.46 | 27 | 32 | 24.4 | 84.3 | SSW | 3.7 | 7.8 | Ci.-S. | N. SSW | 3.6 | Ω a. d ⋎° ● ⚡ p. |
| 19 | 55.84 | 25.3 | 30 | 23.5 | 90.5 | S quad. | 3 | 9 | Ci.-S. | N. S quad. | 21.1 | ● ⛈ a. ●° d° p. |
| 20 | 56.82 | 26.3 | 29.7 | 23.3 | 84.2 | SSE | 2.3 | 9.5 | Ci.-S. | N. S quad. | .3 | ● ⊕° a. ⚡ p. |
| 21 | 58.76 | 27.2 | 31.5 | 24 | 79.2 | SSE | 1.7 | 9 | Ci.-S. | N. S quad. | ------ | d ⊕° a. |
| 22 | 60.12 | 28.2 | 33.4 | 22.4 | 73.5 | SSW | 1.8 | 3.8 | Ci. | Cu. S | ------ | Ω$^2$ a. ⚡ p. |
| 23 | 60.24 | 28.3 | 35 | 19.5 | 75 | S quad. | 1.8 | 4.7 | A.-Cu. | Cu. SW quad. | 17.8 | Ω ≡° a. ⛈ ●$^2$ p. |
| 24 | 58.55 | 28.1 | 34.2 | 22.6 | 80.3 | WSW | 1.5 | 6.2 | Ci. NE | Cu. NW | .8 | ⛈ ⚡ d p. |
| 25 | 56.97 | 27.8 | 34.6 | 24.2 | 82.5 | SW | 1.3 | 5.3 | Ci. | S.-Cu. W | 6.9 | Ω$^2$ a. ⛈ ● p. |
| 26 | 57 | 26.9 | 32.8 | 23.5 | 84.8 | Variable | 1.7 | 6.8 | Ci. ENE, NE | Cu., N. W quad. | 10.9 | ≡ a. ⊤ ●$^2$ p. |
| 27 | 57.15 | 27.2 | 33.2 | 23.5 | 83.2 | SE, SW | 1.8 | 7.3 | A.-Cu. NE, E | N. SW | 4.1 | Ω$^2$ a. ● ⊤ p. |
| 28 | 57.54 | 27.1 | 33.1 | 23 | 81.7 | SSW, SE | 1.5 | 6.8 | Ci.-S. NE | Cu. SW | ------ | Ω$^2$ a. ⚡ p. |
| 29 | 57.01 | 26.3 | 33.2 | 22.5 | 84.7 | E quad. | 1.2 | 5.5 | Ci. NE | Cu. NW, W | 49.6 | Ω ≡° a. ●$^2$ ⛈ p. |
| 30 | 55.37 | 25.2 | 32.2 | 22 | 90 | NW, NE | 1.3 | 8.8 | Ci. NE, E | Cu. NW | 37.3 | ≡ a. ●$^2$ ⛈ p. |
| Mean | 758.01 | 27.7 | 33.1 | 23.4 | 79.2 | ------------ | 1.9 | 6.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 156.4 | |

### DAGUPAN.

[φ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.22 | 29.1 | 36.1 | 24.8 | 80.2 | SE | 8.8 | 9 | A.-Cu. | Cu., S.-Cu. | ------ | d° a. ⚡ ⊤ p. |
| 2 | 58.61 | 29.3 | 36 | 24.5 | 75.5 | SE quad. | 13.6 | 5.7 | Ci.-S., A.-Cu. | Cu., S.-Cu. | ------ | ⚡ Φ° p. |
| 3 | 59.01 | 28.7 | 36.1 | 23.7 | 78.5 | SE quad. | 7.7 | 7.3 | Ci.-S., A.-Cu. | Cu., S.-Cu. | ------ | ○° a. ⚡° ⊤° p. |
| 4 | 59.23 | 28.6 | 37.3 | 24 | 79.7 | S quad. | 11.2 | 5.3 | Ci.-S. | Cu., S.-Cu. | 21.6 | ⚡ ⛈ p$^2$ p. |
| 5 | 58.96 | 28.3 | 36.5 | 23.8 | 84.2 | SE, NE | 7.2 | 7 | Ci.-S. | Cu., S -Cu. | 2 | ⚡ ⊤ p° Φ p. |
| 6 | 57.97 | 29.7 | 37.6 | 24 | 73.7 | SE | 9.3 | 6.2 | Ci. | Cu., S.-Cu. | ------ | ⚡ p. |
| 7 | 57.84 | 29 | 37.4 | 24.1 | 78.2 | Variable | 9.1 | 8 3 | A.-Cu. | Cu., S.-Cu. | .8 | ○ a. d$^2$ ⚡ ⊤ p. |
| 8 | 57.67 | 28.3 | 36.1 | 24.2 | 85.7 | Variable | 7.6 | 8.3 | Ci.-S. | Cu., S.-Cu. | 1.5 | ⚡ ⛈ p° p. |
| 9 | 58.31 | 28.6 | 37.1 | 24.6 | 84.8 | SE quad. | 7.3 | 6.8 | Ci.-S. | Cu., S.-Cu. | 20.3 | ⚡° a. p. ⌒ ⊤° p$^2$ p. |
| 10 | 59 18 | 29.5 | 36.9 | 24.5 | 80.5 | SE, NW | 8.7 | 7 | Ci.-S. | Cu., S.-Cu. | ------ | ⚡ ⊤° d° p. |
| 11 | 58.92 | 28.6 | 35.9 | 24.6 | 82.5 | Variable | 7.4 | 6.5 | A.-Cu. | Cu. | 28.2 | ⚡ ⛈ p$^2$ p. |
| 12 | 57.78 | 29 | 36.6 | 23.9 | 78.3 | SE | 7.7 | 7.3 | Ci. | Cu., S.-Cu. | ------ | ⚡ ⊤° p. |
| 13 | 57.78 | 29.1 | 34.3 | 24.6 | 79 | Variable | 8.6 | 7.5 | Ci. | Cu. | 44.9 | ⚡ ⛈ p$^2$ p. |
| 14 | 58.84 | 28.4 | 33.9 | 25 | 82 | Variable | 8 | 7.2 | A.-Cu. | S.-Cu. S, SE | ------ | p a. ⚡° p. |
| 15 | 58.60 | 28.7 | 33.8 | 24.4 | 77.5 | Variable | 8.2 | 5.5 | Ci. | Cu., S.-Cu. | 11.4 | p a. Φ p. |
| 16 | 56.98 | 26.5 | 31.7 | 24 | 88.7 | Variable | 8.4 | 9.5 | A.-Cu. | S.-Cu., N. W | 38.6 | ⊤ p a. p. ⛈ ● p. |
| 17 | 55.23 | 25.6 | 30.1 | 23.2 | 90.7 | Variable | 7.1 | 9.5 | A.-Cu. | N. W | 30.7 | ⌒ p ⊤ a. ● a. p. |
| 18 | 54.14 | 25.7 | 32.7 | 23.6 | 91.8 | SE quad. | 9.8 | 7.5 | Ci., A.-Cu. | S.-Cu. SE | 24.9 | ⊤ p$^2$ p. |
| 19 | 55.01 | 26.2 | 32.4 | 23.8 | 88.2 | SE | 15.6 | 10 | A.-Cu. | N., S.-Cu. SE | 28 | ⌒ a. d$^2$ p$^2$ p. |
| 20 | 56.05 | 25.7 | 28.4 | 23.4 | 89 | SE | 17 | 10 | A.-Cu. | N. SE | 9.2 | d a. p. ● p p. |
| 21 | 58.22 | 25.8 | 32.3 | 23.3 | 87 | SE | 10.7 | 10 | A.-Cu. | N. S | 7.4 | d a. ● ⛈ p. |
| 22 | 59.84 | 27.9 | 34.8 | 22.8 | 79.5 | SE quad. | 9.4 | 3.8 | Ci. | Cu. SE | ------ | d° a. ⚡ p. |
| 23 | 60.18 | 28.1 | 33.1 | 23.4 | 80.5 | W quad. | 10.7 | 2.3 | ------------------ | Cu. | ------ | |
| 24 | 58.52 | 28.9 | 33.2 | 25.2 | 80.2 | NW quad. | 11.9 | 5.5 | Ci., Ci.-S. | Fr.-Cu. NE | ------ | ⚡ p. |
| 25 | 57.10 | 29.4 | 33.0 | 26.5 | 76 | NW quad. | 13.5 | 4.7 | Ci., Ci.-S. | Fr.-Cu., S.-Cu. | ------ | |
| 26 | 56.94 | 28.4 | 33.6 | 23.7 | 79 | Variable | 9.2 | 6.8 | Ci.-S. | Cu., S.-Cu. | ------ | ○° a. ⚡ p. |
| 27 | 57.03 | 27.5 | 33.7 | 24.5 | 82.4 | SE | 8.9 | 8.8 | A.-Cu. E | S.-Cu. | ------ | |
| 28 | 57.32 | 27.8 | 33.7 | 23.8 | 84.2 | Variable | 7.7 | 9.3 | A.-Cu. | S.-Cu. SE | .5 | ⌒° d° p. |
| 29 | 56.83 | 27.6 | 33.3 | 23.4 | 84.5 | Variable | 9.6 | 7.3 | Ci. | S.-Cu., N. | 1.8 | d$^2$ p. |
| 30 | 55.25 | 27 | 32.1 | 23.5 | 84.9 | W quad. | 10.4 | 7.2 | Ci., Ci.-S. | N. NW | 14.2 | ≡ a. d p$^2$ ⚡ p. |
| Mean | 757.72 | 28 | 34.3 | 24.1 | 82.2 | ------------ | 9.7 | 7.2 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | ---------- | ------------------ | ------------------ | 286 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 7.5 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 758.12 | 29.1 | 33.3 | 25.2 | 77.5 | S quad. | 2.7 | 10 | Ci.-S. | Cu.-N. | 8.6 | Ω° a. ☈ ● ↯ p. |
| 2 | 58.39 | 29 | 34.1 | 24.4 | 76.2 | S quad. | 3.2 | 8.5 | Ci.-S. | Cu.-N. | ------ | ⊤ ⊍° ↯ p. |
| 3 | 58.93 | 28.2 | 33.5 | 24.6 | 80.2 | S | 1.7 | 10 | Ci.-S. | Cu. S | .5 | ●° ⊤ ↯ p. |
| 4 | 59.14 | 28.6 | 33 | 24.1 | 79.8 | S, WNW | 2.5 | 9.2 | Ci.-S. | Cu., Cu.-N. | 55.6 | ↯ a. ↙° ☈² ●² p. |
| 5 | 58.85 | 28.2 | 33.7 | 23.9 | 81.7 | Variable | 2 | 9.8 | Ci.-S. | Cu. SE | 37.8 | ☈² ● ↙° p. |
| 6 | 57.91 | 28.3 | 33.9 | 23.5 | 79.2 | SE quad. | 2.2 | 9.2 | Ci.-S. | S.-Cu. | 37.6 | ↯ ≡° a. ☈² ● p. |
| 7 | 57.75 | 28.7 | 34.2 | 24.4 | 77.8 | Variable | 2.2 | 9.5 | Ci.-S. | S.-Cu. | ------ | ≡° a. ⊤ p. ↯ a. p. |
| 8 | 57.56 | 29 | 32.9 | 25 | 79.3 | S | 2 | 10 | Ci.-S. | Cu. | 7.6 | ◯° a. p. ⊍° ☈° p. |
| 9 | 58.12 | 28.6 | 33 | 24.1 | 80.8 | S | 2 | 9.7 | Ci.-S. | Cu. | 9.4 | ≡° a. ⊤ ☈ ● ↯ p. |
| 10 | 59.14 | 29.3 | 34.9 | 24.6 | 78.2 | SE quad. | 2.3 | 7.7 | Ci.-S. | Cu., Cu.-N. | ------ | ≡° a. ⌒ ⊍° p. ↯ |
| 11 | 58.80 | 27.9 | 34.8 | 24 | 83 | S | 2.2 | 7.7 | Ci.-S. | Cu., Cu.-N. | 29.5 | Ω° a. ⊤ ☈ ● ↯ p. |
| 12 | 57.78 | 28.9 | 34.9 | 23.6 | 78.5 | SE quad. | 2.5 | 9.3 | Ci.-S. | Cu. | 30.0 | ↯ ◯° a. ☈ ●² p. |
| 13 | 57.87 | 28.1 | 33.6 | 24.4 | 84.3 | W quad. | 2.3 | 9.8 | Ci.-S. | Cu. WSW | 55.3 | ↯ a. ☈ p. ⊤ ● ◯° |
| 14 | 58.88 | 27.4 | 31.5 | 24.3 | 85.7 | S quad. | 2.2 | 10 | Ci.-S. | Cu. SW | 4.1 | ● ☈ ◯° a. ↯ p. p |
| 15 | 58.42 | 28.1 | 33.1 | 24.1 | 81 | S quad. | 3.2 | 10 | Ci.-S. | Cu. SW | 13.5 | Ω° a. d ↯ p. |
| 16 | 56.82 | 25.5 | 30.1 | 23.2 | 93.8 | SW, SSE | 2.7 | 10 | Ci.-S. | N.-cf., Cu.-N. | 185.5 | ⊍² ⌒ ↙° ⊤ ●² ☈ |
| 17 | 54.82 | 25.6 | 30 | 23.6 | 94.2 | SW quad. | 1.7 | 10 | Ci.-S. | N.-cf. W | 40.9 | ●² a. ⊤ p. p a. p. |
| 18 | 53.48 | 26.8 | 32.4 | 23.6 | 85.7 | SSE | 2.8 | 10 | Ci.-S. | Cu. S | 5.4 | ⊍² ⌒ a. p° ⊤ p. |
| 19 | 54.27 | 25.6 | 29.5 | 23.7 | 92 | S | 4 | 10 | Ci.-S. | N. | 22.6 | ●° a. p. ↙° d p. |
| 20 | 55.43 | 24.8 | 29.4 | 23.4 | 93.2 | S | 4.2 | 10 | Ci.-S. | N.-cf. | 25.4 | ●° a. ● p. p a. p. |
| 21 | 57.82 | 25.2 | 29.5 | 23.6 | 92.5 | SSE | 3.3 | 10 | ------ | N.-cf. | 3.1 | ● a. ⊤ ●° p° p. |
| 22 | 59.59 | 28 | 32.6 | 24.1 | 79.8 | S quad. | 3.5 | 9 | Ci.-S. | S.-Cu. | ------ | d ↯ p. |
| 23 | 60.14 | 27.6 | 32.5 | 24 | 83.2 | SSE, WNW | 2 | 7.2 | Ci.-S. | Cu. | ------ | Ω a. ⊤ d° p. |
| 24 | 58.48 | 28.1 | 32.6 | 23.5 | 83.5 | W quad. | 2.7 | 10 | Ci.-S. | Cu. W | ------ | Ω≡° a. ☈ p. ◯° |
| 25 | 57.02 | 28 | 32.6 | 23.9 | 81.8 | S, W | 2.2 | 9.3 | Ci.-S. | Cu. | ------ | Ω≡° a. ◯° a. p. |
| 26 | 56.75 | 27.8 | 32.5 | 24.4 | 84 | S | 2.2 | 10 | Ci.-S. | Cu. SW | 1.3 | ≡° a. d ⊤ ● p. |
| 27 | 56.77 | 26 | 31.1 | 23.9 | 89.3 | S | 3 | 10 | Ci.-S., A.-Cu. | Cu. SW | 5.9 | ≡° a. ● a. p. |
| 28 | 57.15 | 27.5 | 33 | 23.6 | 82.7 | S quad. | 2.3 | 10 | Ci.-S., A.-Cu. | Cu. SW | 3.6 | ≡° a. ⌒ ●° p. |
| 29 | 56.71 | 27.5 | 32.1 | 24.2 | 85.3 | SW quad. | 2 | 10 | Ci.-S. | Fr.-Cu. W | 10.9 | ≡° a. d ⊤ ⌒ ● p. |
| 30 | 55.11 | 27.6 | 31.7 | 23.8 | 83.2 | NW | 2.7 | 10 | Ci.-S. | Cu., Fr.-Cu. NW, NNE | 12.5 | ≡° a. ● ⊤ ◯° p. |
| Mean | 757.54 | 27.6 | 32.5 | 24 | 83.6 | ------ | 2.6 | 9.5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 606.5 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 636.90 | 20 | 23.7 | 16.5 | 82.5 | E quad. | 18.8 | 9.3 | A.-Cu. NE | S.-Cu., Cu.-N. SE | ------ | ⊤ ≡ p. |
| 2 | 37.03 | 19.6 | 24.6 | 16.5 | 88.5 | SE quad. | 18.8 | 5.4 | Variable | Cu.-N. SSE | ------ | Ω a. ⊤² p. |
| 3 | 37.38 | 19.4 | 24.4 | 16 | 89.7 | E, SE | 11.9 | 7.9 | Ci.-S. N | Cu. WSW | ------ | ≡² ⌒° p. |
| 4 | 37.59 | 19.6 | 24.9 | 16.5 | 94.8 | E, WSW | 15.4 | 7.1 | Ci.-S. S | Cu.-N. SW | ------ | ≡² p. |
| 5 | 37.37 | 19.8 | 24.9 | 16.4 | 88 | E quad. | 10.7 | 7.1 | Ci. ESE | Cu. SSE | ------ | Ω ≡ a. ≡² ⊤ p. |
| 6 | 36.67 | 20.1 | 25.8 | 16.3 | 78.2 | E quad. | 12.3 | 5.6 | Ci.-S. N | Cu. S | ------ | Ω a. ≡° p. |
| 7 | 36.42 | 19.5 | 25.5 | 16.1 | 81.3 | E quad. | 14.3 | 8.4 | Ci.-S. SSE | Cu.-N. NE, WNW | ------ | ≡² p. |
| 8 | 36.42 | 19.7 | 25.4 | 16.1 | 86.5 | E quad. | 10.3 | 9 | Ci.-S. SSW | Cu. ESE | 1.3 | Ω a. ≡² ● p. |
| 9 | 37.01 | 19.8 | 25.5 | 16.7 | 89.2 | E | 9.7 | 7.7 | Ci.-S. NNW | Cu.-N. ESE | .3 | Ω a. ⊤ p p. ≡² |
| 10 | 37.93 | 19.6 | 26.2 | 16.8 | 86.8 | Variable | 8.4 | 6.9 | Ci. N | Cu. E | 20.1 | Ω a. ≡² ● ⌒ p. |
| 11 | 37.46 | 19.7 | 25.3 | 16.7 | 86.8 | E quad. | 12.2 | 6.3 | Ci. | Cu. NE | 13.7 | ●² ⊤ ≡² p. |
| 12 | 36.56 | 19.3 | 24.4 | 16.8 | 91.3 | E, W | 10 | 6.3 | Ci. W | Cu. E | 9.4 | Ω a. ≡² ● p. |
| 13 | 36.48 | 19.6 | 24.1 | 16.5 | 93.8 | E, WSW | 10.6 | 9.1 | Ci.-S. | Cu.-N. E, SE | 18.3 | Ω a. ⊤ p. ≡² ● |
| 14 | 37.09 | 19.5 | 23.3 | 16.6 | 92.5 | E | 7.9 | 9.3 | Ci. | N.-cf. ESE | .8 | ≡² d a. p. |
| 15 | 36.91 | 18.5 | 23.2 | 16.3 | 95.3 | W quad. | 13.7 | 7.1 | Ci. SE | Cu. W | 5.3 | ≡² ●° p p. |
| 16 | 35.20 | 17.7 | 22.3 | 16 | 99.5 | W quad. | 21.7 | 10 | ------ | N. | 32.5 | ≡² ● a. p. |
| 17 | 33.68 | 17.4 | 19.3 | 16 | 99.2 | W | 17.1 | 10 | Ci.-S. | N. | 15.5 | ≡ ● a. p. |
| 18 | 32.70 | 18.5 | 22.8 | 15.6 | 94.5 | SE quad. | 12.4 | 9.3 | Ci. | S.-Cu. S, SE | 11.1 | ≡ a. p. d° ● p. |
| 19 | 33.26 | 17.5 | 21 | 15.9 | 95 | SE quad. | 18.1 | 10 | A.-Cu. | N. S | 5.9 | ≡ a. ●° p. p a. p. |
| 20 | 34.18 | 16.6 | 18.8 | 15.6 | 95.7 | SE | 24.3 | 10 | A.-Cu. | N. S | 6.7 | ↙° a. d° a. p. |
| 21 | 36.28 | 17.4 | 21.8 | 15.7 | 88.2 | E quad. | 18.9 | 10 | A.-S. | S.-Cu. S, SSW | 5.6 | p p. |
| 22 | 37.93 | 18.9 | 24.5 | 15.4 | 84.8 | SE | 13.4 | 4.7 | Ci. | Cu. SW | ------ | ≡² p. |
| 23 | 38.27 | 19 | 23.8 | 16.2 | 92.2 | SW quad. | 11 | 6.3 | Ci. | Cu. E | .8 | ⊤ ≡ d° ● p. |
| 24 | 36.94 | 18.6 | 24.1 | 15.7 | 94 | NW quad. | 12 | 8.1 | Ci. | Fr.-N. WNW | ------ | Ω ◯° a. ≡ p. |
| 25 | 35.66 | 18.3 | 24 | 15.5 | 85 | W quad. | 16.6 | 8.9 | Ci. | S.-Cu. WbyN | ------ | Ω a. |
| 26 | 35.38 | 18.2 | 23 | 15.7 | 87 | W | 15.6 | 9.7 | Ci.-S. | Cu. WbyS | ------ | Ω ⊕ a. ≡° d p. |
| 27 | 35.36 | 17.4 | 23.8 | 15.9 | 95 | W | 13.5 | 9.7 | A.-Cu. | N. W | 16.3 | Ω a. d° ● ≡² p. |
| 28 | 35.64 | 17.5 | 23.3 | 15.9 | 92.7 | W | 12.6 | 9.3 | Ci.-Cu. ENE | Cu., N. | 24.4 | ● ≡² p. |
| 29 | 35.18 | 18.1 | 23.8 | 15.6 | 89 | W | 10.2 | 9 | Ci.-S. E | S.-cf. EbyN | 36.9 | ●² ≡ p. |
| 30 | 33.70 | 17.7 | 21.9 | 15.5 | 95.3 | W | 10.2 | 8.7 | Ci.-S. E | S.-Cu. NE | 20.5 | ≡² ● p. |
| Mean | 636.15 | 18.8 | 23.6 | 16.1 | 90.4 | ------ | 13.8 | 8.2 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 245.4 | |

[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 758.07 | 29.6 | 33.5 | 25 | 71.5 | S | 7.8 | 5 | Ci.-S. | Cu. | ------ | d ⚡ p. |
| 2 | 58.45 | 28.9 | 33.9 | 23.6 | 77 | Variable | 9 | 3.2 | Ci.-S. | Cu. | 29.2 | d° ⛈ ⚡ ⌒ ●² p. |
| 3 | 59.09 | 28.7 | 33 | 24.5 | 78.7 | Variable | 6.4 | 3.7 | Ci.-S. | Cu. | ------ | ⛈° p. |
| 4 | 59.29 | 28.8 | 33.8 | 24.5 | 75.2 | Variable | 8.6 | 4 | Ci.-S. | Cu. | ------ | d° ⛈ ⊕ p. |
| 5 | 58.64 | 29.2 | 34.4 | 23.5 | 76.7 | Variable | 7.2 | 1.2 | Ci.-S. | Cu. | 21.9 | d ● ⛈ ⚡ p. |
| 6 | 58.03 | 29.1 | 33.8 | 25 | 80.7 | Variable | 8 | 3.5 | Ci.-S. | Cu. | .5 | ●° p. |
| 7 | 57.81 | 29.2 | 33.4 | 25.5 | 75.8 | Variable | 8.2 | 2.7 | Ci.-S. | Cu. | ------ |  |
| 8 | 57.57 | 29.2 | 34 | 24.6 | 78.7 | Variable | 8.1 | 2.8 | Ci.-S. | Cu. W | 39.1 | ⛈ ●² p. |
| 9 | 58.17 | 28.5 | 34.5 | 25 | 81.5 | E quad. | 8 | 2.8 | Ci.-S. | Cu. | 21 | ⛈ ● p. |
| 10 | 59.27 | 28.5 | 33.9 | 23.8 | 81.7 | Variable | 8.2 | 3.3 | Ci.-S. | Cu.-N., Cu. | .3 | ● a ⛈ ●° ⊕ p. |
| 11 | 58.58 | 28.7 | 33.7 | 24 | 81.3 | SE quad. | 7 | 2.7 | Ci.-S. | Cu. | 9.2 | ⛈ d² ● ⊍ p. |
| 12 | 57.90 | 28.3 | 33.7 | 24.5 | 80.7 | Variable | 6.8 | 4 | Ci.-S. | Cu. | 5.1 | ⛈ ● p. |
| 13 | 57.94 | 28.4 | 32.4 | 24.7 | 82.2 | Variable | 6 | 6.3 | Ci.-S. | Cu.-N., Cu. | ------ | ⊕ a. ⚡° p. |
| 14 | 58.83 | 28.2 | 32.7 | 25 | 80.2 | SW quad. | 9.5 | 5.2 | Ci.-S. | Cu.-N. | 2.8 | ⛈ ⌒ d ⚡° p. |
| 15 | 58.26 | 28.2 | 32.3 | 24.4 | 80.8 | S quad. | 11.5 | 5 | Ci.-S. | Cu.-N., Cu. | 7.2 | ● a. p. |
| 16 | 56.54 | 26.2 | 29 | 24.2 | 90.2 | SE quad. | ---------- | 7.7 | Ci.-S. | N. | 60 | ● a. p. ⛈ p. |
| 17 | 54.58 | 26.2 | 29 | 23.7 | 89.5 | SE quad. | ---------- | 8.7 | Ci.-S. | Cu.-N. SSW | 32.3 | ⊍ ⛈ a. ● a. p. |
| 18 | 53.32 | 27.4 | 31.8 | 24.5 | 84.2 | S quad. | ---------- | 5.8 | Ci.-S. | N. | 39.1 | ● a. ⌒ ●° p. |
| 19 | 53.79 | 27.9 | 32 | 25 | 79.3 | S | ---------- | 6.7 | Ci.-S. | Cu.-N. SSW | 1 | ●² a ●° p. |
| 20 | 54.47 | 28.4 | 32.2 | 24.5 | 72.5 | SSW | 23.4 | 9 | Ci.-S. | S.-Cu. | 3.8 | ⊕ d° a. ↙° ●ᶜ p. |
| 21 | 57.19 | 27.9 | 31.6 | 24 | 75.2 | S quad. | 20.9 | 8.8 | A.-Cu., Ci.-S. | Cu., Cu.-N. | 4.9 | d a. d ● p. |
| 22 | 59.78 | 28.2 | 32 | 23.8 | 76.2 | S quad. | 10.7 | 4.5 | Ci.-S. | Cu. SSW | .8 | ⛈ d ● p. |
| 23 | 60.15 | 27.9 | 31.9 | 23.5 | 81.2 | SW quad. | 7.8 | 1.7 | Ci.-S. | Cu. SW | ------ | ⚡° p. |
| 24 | 58.50 | 28.4 | 32.5 | 25 | 79.5 | S quad. | 6.2 | 2 | Ci.-S. | Cu. | 14 | Ω a. ● ⚡° p. |
| 25 | 56.93 | 28.2 | 31.8 | 24 | 80.2 | S quad. | 9.1 | 5.2 | Ci.-S. | Cu.-N. | ------ | ● a. |
| 26 | 56.72 | 28.3 | 31.5 | 25 | 80.2 | S quad. | 10.6 | 6.7 | Ci.-S. | Cu. | ------ | d° a. ⚡° p. |
| 27 | 56.58 | 28.3 | 32.2 | 25.5 | 78.3 | S quad. | 11 | 4.8 | Ci.-S., A.-Cu. | Cu. SSW | ------ |  |
| 28 | 57.16 | 27.4 | 31.8 | 22.5 | 80.7 | SE quad. | ---------- | 4.3 | Ci. | Cu. WSW | 37.6 | d ● p. |
| 29 | 56.84 | 27.4 | 31.7 | 23 | 81.7 | SE quad. | 8.6 | 3.3 | Ci., Ci.-S. | Cu. | 3.3 | d ● p. |
| 30 | 54.96 | 27.2 | 31.2 | 22.8 | 84.8 | Variable | 8.5 | 4.3 | Ci.-S. | Cu.-N. N | ------ | d° p. |
| Mean | 757.45 | 28.2 | 32.5 | 24.3 | 79.9 | ------------ | 9.5 | 4.6 | ------------------ | ------------------ | ------ |  |
| Total | ------- | ------ | ------ | ------ | ------- | ------------ | --------- | --------- | ------------------ | ------------------ | 333.1 |  |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *0-12.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.24 | 28.5 | 34.5 | 24.5 | 83.7 | SW, S | 0.3 | 5.5 | Ci., Ci.-S. | S.-Cu., Cu. S | ------ | Ω² a. ⚡ p. |
| 2 | 58.90 | 29.7 | 36.2 | 23 | 73.5 | SE | .7 | 1 | Ci. | Cu. | ------ | Ω² a. |
| 3 | 59.12 | 29.2 | 37.3 | 23.3 | 73.3 | NW | .5 | 3.5 | Ci. | Cu. | ------ | Ω² a. ⊍ p. |
| 4 | 59.54 | 30 2 | 37.3 | 24.8 | 72.7 | SE | .8 | 5.5 | Ci. | Cu. S, SE | ------ | Ω a. ⚡ p. |
| 5 | 59.50 | 29.2 | 36.5 | 23.5 | 74.2 | NE, SE | .3 | 5 | Ci. | Cu. SE, E | ------ | Ω² a. ⚡ p |
| 6 | 59.04 | 29.5 | 37.4 | 24.5 | 72.3 | S quad. | .7 | 4.3 | Ci. | Cu. E | ------ | Ω a. |
| 7 | 58.45 | 29.1 | 36.4 | 22.7 | 71.5 | N | .3 | 7.2 | Ci., Ci.-S. SW, E | Cu. Variable | ------ | ○° a. ⚡ p. |
| 8 | 58.04 | 30.2 | 37.4 | 24.5 | 70.8 | SE | .3 | 5.3 | Ci. | Cu. E | ------ | Ω² a. |
| 9 | 58.72 | 30.3 | 37.5 | 24.7 | 70.5 | SW, NE | .3 | 4.8 | Ci., Ci.-S. | Cu. E, SE | ------ | Ω² a. |
| 10 | 59.78 | 28.6 | 37 | 23.5 | 80.8 | N | .2 | 4 | Ci. | Cu., Cu.-N. S | 2.8 | Ω a. ● ⊤ p. |
| 11 | 59.68 | 27.3 | 33 | 23.5 | 83.7 | Calm | 0 | 5.3 | Ci., Ci.-S. | Cu.-N. ENE | ------ | d ⊤ p. |
| 12 | 58.28 | 29.2 | 37.5 | 22.8 | 72.3 | SE | .3 | 3.8 | Ci. | Cu. SSE | ------ | Ω a. |
| 13 | 57.80 | 29.9 | 37.7 | 22.3 | 67 | Variable | .8 | 2 | Ci.-S. | Cu. | ------ | Ω a. ⚡ p. |
| 14 | 58.20 | 30.5 | 38.3 | 24.7 | 70.2 | SE, NW | 1.2 | 3.3 | Ci. | Cu. SE | ------ | ⚡ a. p. |
| 15 | 57.54 | 30.4 | 38.3 | 25 | 73.8 | S quad. | .8 | 7 | Ci. | Cu. SW | ------ | Ω a. ⊤ ⚡ p. |
| 16 | 55.45 | 29.7 | 38.7 | 24.8 | 78.3 | SE quad. | .8 | 6.7 | Ci., Ci.-S | Cu., Cu.-N. WSW, N | ------ | Ω a. ⛈ ⚡ p. |
| 17 | 53.78 | 29.5 | 34.8 | 24 | 82 | SE | 1.3 | 7.3 | Ci. NE | Cu.-N. S, SE | ------ | Ω a. |
| 18 | 52.92 | 29.8 | 38.7 | 23.8 | 75.5 | S quad. | 1.3 | 4.3 | Ci. | Cu., Cu.-NE | 15.5 | ⊤ ● ⛈² ⚡ p |
| 19 | 54.10 | 28.2 | 36.8 | 22.8 | 77 | SW quad. | 1.7 | 5.8 | Ci. | Cu.-N. SW | 22.1 | ●² ↙° ⛈ ⚡ p. |
| 20 | 55.21 | 28.1 | 32.7 | 25 | 75.3 | SW | 2.5 | 6.8 | Ci.-S. | Cu.-N. SW, S | ------ | ⚡ p. |
| 21 | 57.26 | 28.9 | 35.5 | 23.8 | 72 | S quad. | 1.7 | 5.8 | Variable | Cu. S | ------ | Ω a. |
| 22 | 59.40 | 29.6 | 37.4 | 23 | 71.8 | NW | .8 | 1.3 | Ci. | S.-Cu. | ------ | Ω² a. |
| 23 | 59.63 | 29.7 | 36.4 | 24.7 | 75.5 | NW | .8 | 6 | Ci. | S.-Cu., Cu. S,SW | ------ | Ω a. ⚡² p. |
| 24 | 57.58 | 29.8 | 37.3 | 24.6 | 76.2 | SE, NW | 1 | 5.5 | Ci. | Cu. S | ------ | Ω² a. ⚡² p. |
| 25 | 55.55 | 30.5 | 36.5 | 24.8 | 71.2 | Variable | .7 | 6.3 | Ci. | Cu. S,SW | ------ | Ω a. ⛈° ⚡ p. |
| 26 | 55.50 | 29.8 | 36.6 | 23.8 | 70.3 | NW | .5 | 8.3 | Ci.-S. | Cu. | ------ | ○° a. ⚡ p. |
| 27 | 55.57 | 29.8 | 38.3 | 21.6 | 69.7 | Variable | 1 | 7 | Ci. | Cu., Cu.-N | 19.3 | ↙° ●² ⛈² p. |
| 28 | 56.92 | 27.1 | 36.3 | 23.3 | 81.8 | S quad. | 1 | 6 | Ci.-Cu. | Cu.-N N | ------ | ⚡ a. p. d p. |
| 29 | 56.90 | 27.4 | 34.8 | 23.2 | 83.7 | S quad. | .5 | 5.2 | Ci. | Cu. S | ------ | d a. |
| 30 | 55.06 | 27.3 | 33.5 | 24 | 81.8 | NW | .5 | 6.3 | Ci. | Cu.-N. NE | 24.4 | ●² ⛈° ⚡ p. |
| Mean | 757.42 | 29.2 | 36.6 | 23.8 | 75.1 | ------------ | .8 | 5.2 | ------------------ | ------------------ | ------ |  |
| Total | ------- | ------ | ------ | ------ | ------- | ------------ | --------- | --------- | ------------------ | ------------------ | 84.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Perct. | | Km.p.h. | 0–10. | | | | | mm. | |
| 1 | 758.71 | 28.5 | 33.2 | 24.6 | 77.3 | SE | 11.1 | 3.5 | Ci., Ci.-S. | | Cu.-N. | SE | ------ | ∞ a. ↯ p |
| 2 | 58.62 | 29.1 | 35 | 24.4 | 77.3 | Variable | 16 | .3 | ------------------ | | Cu.-N. | S | ------ | ↯ p. |
| 3 | 59.18 | 29.1 | 33.9 | 25.1 | 75 | Variable | 10.5 | 1.5 | Ci.-S. | W | S.-Cu. | | ------ | ↯ Γ↯ a. ↯ p. |
| 4 | 59.37 | 28.6 | 34.2 | 24.7 | 76 | E quad. | 14.2 | .5 | Ci.-S. | | Cu. | S | ------ | ↯ p. |
| 5 | 59.53 | 28.4 | 33.9 | 24.1 | 76.2 | SE quad. | 11.5 | .3 | ------------------ | | Cu.-N. | SE | ------ | ↯ p. |
| 6 | 59.21 | 28.1 | 33.6 | 24.2 | 72.8 | E | 12.4 | 2.5 | Ci. | E | Cu.-N., Cu. | | ------ | |
| 7 | 58.71 | 28 | 33.1 | 23.6 | 76.3 | E quad. | 10.6 | 1.7 | Ci. | S | Cu.-N. | | ------ | ↯ p. |
| 8 | 58.06 | 28.8 | 35.2 | 24.4 | 74.7 | E, SE | 12.2 | .8 | ------------------ | | Cu.-N. | SE | ------ | ↯ p. |
| 9 | 58.74 | 29.2 | 35 | 25.6 | 74.7 | E | 12.3 | .2 | ------------------ | | Cu.-N. | SE | ------ | ⊤ p. |
| 10 | 59.80 | 29 | 34.2 | 24.6 | 76.7 | SE | 12.6 | .2 | ------------------ | | Cu.-N. | SE | ------ | ↯ p. |
| 11 | 59.62 | 28.1 | 32.2 | 25 | 81.7 | S quad. | 6.4 | 2.5 | Ci., Ci.-S. | SE | Cu.-N. | SE | 1.3 | ⊤ ● a. ↯ p. |
| 12 | 58.22 | 28.3 | 35.8 | 24.4 | 77 | S, E | 11.6 | 1.5 | Ci.-S., A.-Cu. | | Cu.-N. | | ------ | ↯ p. |
| 13 | 57.86 | 28.7 | 34.2 | 25 | 76 | NE, S | 13 | 1 | Ci. | E | Cu.-N. | | ------ | ↯ p. |
| 14 | 58.50 | 28.7 | 33.4 | 24.6 | 75.5 | Variable | 13.6 | 1.8 | Ci.-S. | | S.-Cu., Cu.-N. | | 22.4 | Γ↯ p. |
| 15 | 57.58 | 28.7 | 35.7 | 24.6 | 81.2 | Variable | 10.5 | 1.7 | ------------------ | | Cu.-N., Cu. | | ------ | ● a. ↯ p. |
| 16 | 55.36 | 28.8 | 34.6 | 25 | 80 | N | 15.9 | 5.2 | A.-Cu. | NW | S.-Cu. | | ------ | ↯ p. |
| 17 | 53.31 | 28.3 | 33.3 | 25.1 | 79.2 | S quad. | 10.8 | 5.7 | Ci.-S. | E | Cu.-N. | W | ------ | ↯ a. p. ⊤ p. |
| 18 | 52.88 | 28.3 | 33.6 | 24.3 | 79.7 | Variable | 14.1 | 4.2 | Ci. | E | S.-Cu., Cu. | | 3.8 | ● Γ↯ p. |
| 19 | 53.98 | 26.4 | 33.3 | 22.9 | 85.3 | S | 14.5 | 5.7 | Ci. | E | N. | S | 21.6 | Γ↯ ● ↯ p. |
| 20 | 54.80 | 28 | 31.5 | 24.6 | 74.7 | S | 18.4 | 9.5 | A.-Cu. | S | S.-Cu. | S | ------ | |
| 21 | 57.17 | 28.1 | 34 | 23.9 | 73.2 | S | 16.5 | 6 | A.-Cu. | S | S.-Cu. | SW | ------ | ↯ a. ⊤ p. |
| 22 | 59.55 | 28.9 | 35.5 | 23.1 | 73.3 | S | 13.8 | .3 | A.-Cu. | | S.-Cu. | | ------ | ⊤ ↯ p. |
| 23 | 59.83 | 29.3 | 33.5 | 25.1 | 76.5 | N quad. | 12 | 1.3 | ------------------ | | S.-Cu., Cu.-N. | | ------ | ∞ a. ↯ p. |
| 24 | 57.72 | 29 | 34.1 | 25.6 | 81.3 | SW quad. | 12.9 | 4.7 | Ci. | E | Cu. | SW | ------ | ○ a. ∞ ↯ a. p. |
| 25 | 55.62 | 29 | 34.2 | 25.8 | 78.5 | Variable | 9 | 3 | Ci. | E | S.-Cu., Cu.-N. | | ------ | ∞ a. |
| 26 | 55.35 | 29.2 | 34 | 24.9 | 73.3 | S quad. | 10.2 | 8 | Ci.-S. | E | S.-Cu. | NE | ------ | ○ a. p. |
| 27 | 55.45 | 29.2 | 34.2 | 25.8 | 73.2 | Variable | 14.8 | 5.7 | Ci. | E | S.-Cu. | W | ------ | ∞ a. ↯ p. ○ a. p. |
| 28 | 56.73 | 28.2 | 33.5 | 24.6 | 77.2 | S | 15.3 | 5.5 | Ci., A.-Cu. | E | S.-Cu., Cu. | | 2.3 | ⊕ a. ⊤ ↯ ● p. |
| 29 | 56.85 | 27 | 32.6 | 24.1 | 83.2 | S quad. | 9.9 | 6.5 | Ci. | E | Cu., Cu.-N. | | 18.8 | ○ a. Γ↯ p. |
| 30 | 55.26 | 28 | 32.6 | 24.1 | 80.2 | NE | 11.7 | 4.3 | Ci. | E | Cu.-N. | E | 13.9 | ● a. ↯ p. |
| Mean | 757.39 | 28.5 | 33.9 | 24.6 | 77.2 | ------------ | 12.6 | 3.2 | ------------------ | | ------------------ | | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | | ------------------ | | 84.1 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.9 | 22.1 | 95 | 94 | 9 | 10 | 28.4 | ●° a. ●$^2$ p. |
| 2 | 30.7 | 22.7 | 97 | 77 | 6 | 9 | 1.8 | Ω ☈ a. ●° a.p. |
| 3 | 32 | 21 | 95 | 75 | 9 | 7 | ------ | ●° a. ◯° p. |
| 4 | 33.9 | 22.1 | 97 | 73 | 5 | 7 | ------ | Ω$^2$ a. ◯° a. p. |
| 5 | 32.6 | 23 | 88 | 81 | 6 | 9 | 1 | <$^2$ ● p. |
| 6 | 31 | 22.3 | 97 | 78 | 7 | 8 | 1.3 | Ω ≡ a. ◯°d$^2$a.p. |
| 7 | 31.1 | 21.7 | 96 | 97 | 10 | 10 | 51.7 | Ω° a. ● a. p. |
| 8 | 32.4 | 20.7 | 95 | 79 | 0 | 5 | .8 | Ω p a. ●° d p. |
| 9 | 35.4 | 21.5 | 97 | 72 | 1 | 5 | .1 | ⊙a. d ●° p. |
| 10 | 32.7 | 22.1 | 97 | 71 | 2 | 3 | ------ | Ω$^2$ T° a. |
| 11 | 33.4 | 22 | 97 | 71 | 3 | 4 | ------ | Ω a. |
| 12 | 32.4 | 22.3 | 96 | 91 | 3 | 10 | 30.2 | ●$^2$ a. p. ☈° p. |
| 13 | 27.7 | 22.6 | 96 | 81 | 9 | 10 | 38.9 | ≡° ●$^2$ a.d$^2$●°p. |
| 14 | 31.9 | 22 3 | 97 | 73 | 4 | 6 | 4.6 | Ω ≡ ● a. |
| 15 | 32.4 | 22.1 | 96 | 73 | 6 | 10 | ------ | Ω$^2$ ●° a. |
| 16 | 35 | 21.5 | 97 | 72 | 9 | 6 | ------ | ≡ a. |
| 17 | 32.6 | 21.5 | 97 | 75 | 3 | 10 | 4.6 | ≡ a. ↙●°☈°p. |
| 18 | 34 1 | 20.4 | 91 | 67 | 4 | 5 | ------ | ◯ d p. |
| 19 | 32.9 | 22.4 | 94 | 65 | 2 | 10 | ------ | ◯° a. |
| 20 | 33.2 | 23.8 | 95 | 54 | 6 | 7 | ------ | |
| 21 | 32.6 | 22.6 | 93 | 69 | 10 | 7 | ------ | |
| 22 | 32.5 | 23 | 96 | 75 | 10 | 9 | .9 | ☈°●°a.d$^2$●°p. |
| 23 | 35.1 | 21.6 | 92 | 73 | 9 | 3 | ------ | |
| 24 | 28.9 | 22.1 | 96 | 78 | 4 | 10 | 3.2 | d$^2$ ● a. |
| 25 | 33 | 21.6 | 97 | 76 | 5 | 7 | ------ | Ω° a. d$^2$ p. |
| 26 | 35.6 | 21.4 | 96 | 72 | 10 | 7 | ------ | |
| 27 | 32.6 | 22.1 | 94 | 80 | 7 | 9 | .8 | d ●° p. |
| 28 | 33 | 21.5 | 96 | 75 | 2 | 7 | .5 | ≡° ●° a.●° d p. |
| 29 | 32.6 | 21.3 | 96 | 67 | 0 | 8 | ------ | Ω≡°a.d°◯°T p. |
| 30 | 34.1 | 21.3 | 96 | 73 | 6 | 10 | ------ | Ω° ≡° d a. |
| Mean | 32.6 | 22 | 95.4 | 75.2 | 5.6 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 168.8 | |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 27.9 | 22.5 | 96 | 88 | 10 | 10 | 3.5 | Ω a. p d p. |
| 2 | 29.8 | 21.2 | 96 | 86 | 2 | 10 | 8.4 | d ● a. |
| 3 | 30.8 | 21.5 | 96 | 74 | 1 | 9 | ------ | Ω a. |
| 4 | 29.8 | 22 | 95 | 74 | 0 | 9 | ------ | Ω a. |
| 5 | 28.8 | 23 | 97 | 80 | 9 | 10 | 8.1 | Ω a. ● a. p. |
| 6 | 31.5 | 22.4 | 96 | 75 | 10 | 10 | 1.5 | ●° a. < p. |
| 7 | 27 | 22.5 | 96 | 96 | 10 | 10 | 6.1 | ●° a. p p. |
| 8 | 31.8 | 21.4 | 96 | 62 | 2 | 6 | 3.6 | |
| 9 | 31.3 | 22 | 97 | 75 | 4 | 9 | 3 | Ω p° a. T ●° p. |
| 10 | 30.8 | 22.5 | 96 | 75 | 9 | 6 | ------ | Ω a. |
| 11 | 30.5 | 23.2 | 96 | 77 | 2 | 9 | ------ | Ω a. T < p. |
| 12 | 29.9 | 23.5 | 97 | 80 | 10 | 9 | .8 | Ω a. ●° p. |
| 13 | 30.8 | 23 | 97 | 96 | 10 | 10 | 14.7 | Ω ● a. ●° p. |
| 14 | 31.7 | 22.2 | 98 | 61 | 7 | 10 | ------ | Ω a. < Φ p. |
| 15 | 30.1 | 22 | 97 | 75 | 0 | 10 | ------ | Ω a. |
| 16 | 30.5 | 22 | 95 | 79 | 10 | 10 | ------ | Ω a. |
| 17 | 28.3 | 23 | 97 | 81 | 10 | 10 | 12.7 | Ω a. ● a. p. d p. |
| 18 | 30.3 | 22.8 | 96 | 75 | 3 | 8 | ------ | Ω a. |
| 19 | 30.8 | 20.5 | 92 | 76 | 1 | 9 | ------ | Ω a. T p. |
| 20 | 31.8 | 22.5 | 97 | 78 | 5 | 10 | ------ | Ω p° a. |
| 21 | 32.8 | 22 | 96 | 76 | 9 | 9 | ------ | Ω ☈ a. |
| 22 | 31.8 | 21.5 | 96 | 75 | 10 | 10 | ------ | Ω a. < d p. |
| 23 | 30.8 | 21.8 | 95 | 71 | 3 | 7 | ------ | Ω a. < p. |
| 24 | 27.8 | 21.5 | 95 | 90 | 9 | 10 | 1.3 | Ω ⌒ ●° a. < p. |
| 25 | 30.7 | 22 | 96 | 80 | 6 | 10 | 1 | Ω a. ●° d p. |
| 26 | 30.3 | 21.2 | 96 | 67 | 9 | 5 | ------ | Ω a. |
| 27 | 30.8 | 21.2 | 96 | 74 | 10 | 10 | ------ | Ω a. |
| 28 | 32.8 | 21.5 | 97 | 69 | 4 | 6 | ------ | Ω a. |
| 29 | 30.7 | 21.5 | 96 | 70 | 1 | 10 | ------ | Ω a. |
| 30 | 30.3 | 21.5 | 95 | 81 | 10 | 10 | .8 | Ω a. ●° p. |
| Mean | 30.4 | 22 | 96 | 77.2 | 6.2 | 9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 65.5 | |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28 | 23.9 | 91 | 80 | 10 | 10 | 2.3 | ● a. |
| 2 | 29.5 | 22.4 | 90 | 73 | 5 | 9 | ------ | Ω° T a. |
| 3 | 29.6 | 23 | 91 | 75 | 9 | 9 | ------ | |
| 4 | 30.7 | 22.6 | 87 | 74 | 8 | 7 | ------ | |
| 5 | 29.4 | 23.8 | 87 | 79 | 9 | 9 | 4.1 | ●° a. |
| 6 | 29.9 | 23.4 | 94 | 79 | 4 | 10 | 7.9 | ●° ⌒ p. |
| 7 | 27 | 23.4 | 98 | 92 | 10 | 10 | 7.6 | ● a. p. |
| 8 | 30 | 22.5 | 97 | 76 | 2 | 8 | ------ | ≡ Ω a. ⌒ ●° p. |
| 9 | 30.4 | 23 | 89 | 78 | 5 | 3 | ------ | |
| 10 | 29.5 | 23.4 | 84 | 76 | 6 | 8 | ------ | |
| 11 | 29.2 | 23.5 | 84 | 74 | 7 | 9 | ------ | |
| 12 | 29.5 | 23.4 | 88 | 77 | 10 | 9 | ------ | d p. |
| 13 | 28.1 | 23.2 | 89 | 84 | 9 | 10 | 12.7 | ☈ a. ●° p. |
| 14 | 30.6 | 23 | 90 | 68 | 9 | 9 | ------ | |
| 15 | 29.7 | 23.4 | 90 | 76 | 1 | 8 | ------ | |
| 16 | 29.6 | 24.9 | 77 | 80 | 10 | 10 | ------ | |
| 17 | 28 | 23.5 | 88 | 79 | 9 | 10 | 1.3 | p. a. |
| 18 | 30.2 | ------ | 84 | 68 | 9 | 9 | ------ | |
| 19 | 31.1 | 23.4 | 90 | 72 | 2 | 9 | ------ | |
| 20 | 31 | 24.1 | 87 | 73 | 5 | 7 | ------ | |
| 21 | 31.4 | 23.6 | 87 | 72 | 8 | 7 | ------ | |
| 22 | 28.6 | 24.9 | 80 | 74 | 10 | 9 | 2 | ● a. |
| 23 | 30.1 | 23 | 84 | 77 | 4 | 6 | ------ | d p. |
| 24 | 28.8 | 23.4 | 87 | 76 | 9 | 10 | ------ | d p. |
| 25 | 29.4 | 23 | 91 | 84 | 7 | 10 | 15.2 | ● d p. |
| 26 | 29 | ------ | 87 | ------ | 9 | ------ | ------ | ☈° a. |
| 27 | 30.2 | ------ | 88 | 78 | 7 | 10 | ------ | |
| 28 | 29.6 | 23.5 | 90 | 85 | 8 | 7 | ------ | |
| 29 | 29.2 | 22 | 83 | 80 | 2 | 9 | ------ | |
| 30 | 28.7 | 22 | 94 | 80 | 10 | 9 | ------ | |
| Mean | 29.5 | 23.3 | 88.2 | 77.2 | 7.1 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 53.1 | |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.2 | 22.3 | 96 | 72 | 5 | 6 | 6.4 | ● p. |
| 2 | 30.9 | 22.2 | 95 | 72 | 7 | 6 | ------ | |
| 3 | 31.6 | 22.3 | 95 | 72 | 5 | 6 | ------ | |
| 4 | 31.2 | 21.6 | 97 | 70 | 5 | 6 | ------ | |
| 5 | 30.2 | 21.7 | 98 | 74 | 5 | 8 | 25.9 | ●$^2$ T$^2$ < p. |
| 6 | 30.2 | 21.5 | 98 | 76 | 7 | 5 | 2.5 | ●° p. |
| 7 | 29.7 | 22.1 | 97 | 75 | 8 | 8 | ------ | d a. |
| 8 | 30.8 | 22.4 | 96 | 67 | 6 | 7 | ------ | |
| 9 | 31.7 | 22.9 | 96 | 63 | 6 | 5 | ------ | |
| 10 | 32.6 | 22.4 | 96 | 73 | 5 | 5 | ------ | |
| 11 | 33 | 22.9 | 98 | 67 | 6 | 5 | ------ | |
| 12 | 31.1 | 22.8 | 96 | 72 | 8 | 7 | 52.1 | ●$^2$ T p. |
| 13 | 31.7 | 22.3 | 98 | 69 | 6 | 5 | ------ | |
| 14 | 32.2 | 22.5 | 96 | 62 | 6 | 7 | ------ | |
| 15 | 31.5 | 22.3 | 91 | 71 | 6 | 5 | ------ | |
| 16 | 30.7 | 22.5 | 96 | 75 | 6 | 5 | ------ | |
| 17 | 31.7 | 21.4 | 94 | 62 | 6 | 5 | ------ | |
| 18 | 31.6 | 22.1 | 96 | 69 | 8 | 6 | ------ | |
| 19 | 31.5 | 22 | 91 | 74 | 8 | 6 | 17 | ● ☈ p. |
| 20 | 31.9 | 21.5 | 98 | 64 | 5 | 7 | 7.6 | ● p. |
| 21 | 32.4 | 23.1 | 96 | 62 | 8 | 6 | 10.2 | ● p. |
| 22 | 29.8 | 22.6 | 96 | 71 | 8 | 7 | 23.1 | ● a. p. |
| 23 | 30.7 | 21 | 96 | 74 | 6 | 8 | ------ | |
| 24 | 27.8 | 22 | 97 | 81 | 10 | 9 | 18.8 | ● a. |
| 25 | 30 | 21.9 | 96 | 72 | 6 | 5 | ------ | |
| 26 | 30.7 | 21.3 | 98 | 71 | 6 | 8 | ------ | |
| 27 | 30.5 | 21.9 | 96 | 68 | 5 | 6 | ------ | |
| 28 | 31.4 | 21.3 | 96 | 68 | 5 | 5 | ------ | |
| 29 | 31 | 21 | 95 | 72 | 6 | 5 | ------ | |
| 30 | 31.7 | 21.8 | 97 | 72 | 6 | 5 | ------ | |
| Mean | 31.1 | 22.1 | 96 | 70.3 | 6 .3 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 163.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### COTABATO.

[φ=7° 13′ N; λ=124° 15′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 23.5 | 97 | 71 | 7 | 7 | ------ | Ω$^2$ ○$^2$ a. ⚡ p. |
| 2 | 32.3 | 24 | 92 | 81 | 10 | 8 | ------ | Ω$^2$ a. ⛈ d° p. |
| 3 | 31.1 | 22.6 | 93 | 69 | 3 | 9 | ------ | Ω$^2$ a. ⚡ p. |
| 4 | 32.6 | 22.8 | 93 | 64 | 7 | 8 | 1 | Ω$^2$ a. ○ d ⚡ p. |
| 5 | 32 | 23.4 | 95 | 77 | 4 | 8 | 31.5 | Ω a. d ● ⚡ p. |
| 6 | 31.9 | 23 | 95 | 69 | 3 | 7 | 1 | Ω$^2$ a. d ⚡ p. |
| 7 | 31.6 | 22.9 | 96 | 68 | 7 | 7 | 8.9 | Ω$^2$ a. ∪ p. |
| 8 | 31.7 | 23.7 | 96 | 66 | 8 | 5 | 2.8 | Ω$^2$ a. ● ⛈ p. |
| 9 | 32.9 | 24.1 | 94 | 63 | 2 | 4 | ------ | Ω$^2$ a. ⚡ p. |
| 10 | 31.9 | 24.5 | 95 | 70 | 9 | 5 | 63.5 | Ω° ○ a. ●$^2$ p. |
| 11 | 31.4 | 22.6 | 96 | 67 | 9 | 3 | .8 | Ω$^2$ ≡° a. ⛈ d p. |
| 12 | 30.6 | 24.3 | 96 | 68 | 8 | 6 | 1 | Ω$^2$ ≡° a. d ⚡ p. |
| 13 | 31.6 | 23.6 | 94 | 64 | 6 | 4 | 11.4 | Ω° ≡° a. ● p. |
| 14 | 32.4 | 23.1 | 93 | 65 | 10 | 3 | ------ | Ω a. |
| 15 | 31.6 | 24.1 | 94 | 71 | 9 | 7 | 14.5 | Ω$^2$ ⛈ d a. ● p. |
| 16 | 30.4 | 23 | 96 | 87 | 10 | 10 | 2.3 | d a. ⚡ p. |
| 17 | 30.3 | 22.4 | 95 | 93 | 6 | 10 | 17.5 | Ω$^2$ a. ● ⚡ p. |
| 18 | 31 | 22 | 96 | 61 | 10 | 7 | ------ | Ω$^2$ a. ⚡ p. |
| 19 | 31.5 | 23.2 | 88 | 62 | 10 | 7 | ------ | Ω a. ∞ p. |
| 20 | 33 | 22.9 | 96 | 67 | 10 | 6 | ------ | Ω$^2$ ≡° a. |
| 21 | 32.5 | 24 | 96 | 66 | 7 | 6 | 6.4 | Ω$^2$ ○ a. d ⚡ p. |
| 22 | 29.5 | 22.4 | 95 | 78 | 10 | 7 | ------ | Ω d° a. ⚡ p. |
| 23 | ------ | ------ | 97 | ------ | 5 | ------ | ------ | Ω$^2$ a. |
| 24 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 27 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 28 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| Mean | 31.6 | 23.3 | 94.7 | 70.3 | 7.4 | 6.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 162.6[1] | |

### DAPITAN.

[φ=8° 40′ N; λ=123° 25′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.4 | 23.8 | 89 | 66 | 8 | 8 | ------ | ⛈ ●° p. |
| 2 | 32. | 22.9 | 90 | 68 | 9 | 7 | ------ | ○ p. |
| 3 | 32.3 | 22.7 | 91 | 66 | 6 | 5 | ------ | |
| 4 | 32.1 | 22.9 | 94 | 67 | 8 | 7 | ------ | |
| 5 | 32.4 | 22.5 | 95 | 67 | 7 | 4 | ------ | ∪ p. |
| 6 | 32.6 | 22.8 | 94 | 68 | 8 | 7 | ------ | Ω a. ⚡ p. |
| 7 | 33 | 22.6 | 87 | 68 | 8 | 5 | ------ | Ω a. ⚡ p. |
| 8 | 32.8 | 23.6 | 95 | 68 | 8 | 4 | ------ | Ω a. ⊤ ●° p. |
| 9 | 33.2 | 23.8 | 95 | 64 | 8 | 7 | ------ | Ω a. ⊤ ⚡ p. |
| 10 | 33.4 | 22.4 | 89 | 63 | 9 | 6 | ------ | Ω ⊤ a. ⚡ p. |
| 11 | 33.5 | 22.4 | 90 | 62 | 8 | 5 | ------ | Ω a. ⚡ p. |
| 12 | 32.7 | 22.6 | 94 | 68 | 9 | 10 | 3.6 | ○ ● ⊤ p. |
| 13 | 33 | 22.4 | 94 | 64 | 10 | 8 | 2.3 | ● p. |
| 14 | 32.2 | 22.3 | 93 | 64 | 9 | 7 | ------ | ⊂ ⊤ p. |
| 15 | 32.4 | 22.4 | 92 | 65 | 7 | 7 | ------ | Ω a. |
| 16 | 29.6 | 22.9 | 87 | 70 | 8 | 5 | 4.3 | ● a. |
| 17 | 27? | 22.1 | 93 | 80 | 8 | 10 | 46.7 | ● a. p. |
| 18 | 32.5 | 22 | 94 | 68 | 7 | 8 | 28.4 | ● ⛈ p. |
| 19 | 32.8 | 22.1 | 91 | 70 | 9 | 9 | ------ | |
| 20 | 33.4 | 23.6 | 87 | 64 | 7 | 9 | ------ | Ω a. ○ ⚡ p. |
| 21 | 32.8 | 23.8 | 88 | 72 | 7 | 6 | ------ | Ω a. ○ ⚡ p. |
| 22 | 32 | 22 | 90 | 71 | 8 | 7 | ------ | |
| 23 | 32.1 | 22.9 | 90 | 71 | 9 | 7 | ------ | Ω a. |
| 24 | 32 | 23 | 94 | 74 | 9 | 9 | ------ | ○ p. |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 27 | 32.9 | 22.3 | 95 | 70 | 7 | 8 | ------ | ⊤ p. |
| 28 | 33.3 | 22.2 | 90 | 68 | 8 | 7 | ------ | |
| 29 | 32.1 | 22.8 | 90 | 75 | 9 | 10 | ------ | d a. |
| 30 | 32.4 | 22.7 | 90 | 72 | 10 | 8 | ------ | |
| Mean | 32.3 | 22.7 | 91.5 | 68.3 | 8.1 | 7.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 85.3[2] | |

### BUTUAN.

[φ=8° 56′ N; λ=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.8 | 23.9 | 92 | 63 | 8 | 7 | 1 | Ω a. ⛈ ● p. |
| 2 | 30.5 | 23.2 | 97 | 64 | 10 | 8 | 1 | ●° a. p. ⚡$^2$ ⊤ p. |
| 3 | 32.7 | 24.2 | 91 | 68 | 8 | 8 | 4.6 | Ω a. ⛈$^2$ ● p. |
| 4 | 30.6 | 22.9 | 98 | 86 | 10 | 10 | 19.3 | Ω a. ⛈ ● p. |
| 5 | 32.5 | 22.7 | 97 | 75 | 5 | 10 | 3.3 | Ω a. ● a. p. d° p. |
| 6 | 33.3 | 23.4 | 97 | 66 | 8 | 5 | 7.1 | Ω$^2$ a. ● ⚡ p. |
| 7 | 32.8 | 24 | 92 | 85 | 2 | 9 | 4.8 | Ω$^2$ a. ⛈ d ∪ p. |
| 8 | 32.5 | 23.6 | 96 | 61 | 9 | 6 | ------ | Ω$^2$ a. ⛈ p. |
| 9 | 33.1 | 23.8 | 88 | 63 | 2 | 4 | ------ | Ω a. ⛈ ●° p. |
| 10 | 32.7 | 22.9 | 91 | 81 | 1 | 9 | 1 | Ω a. ⛈° ●° p. |
| 11 | 31.1 | 23.5 | 99 | 68 | 10 | 8 | ------ | Ω$^2$ ≡ ○ a. d° ⚡ p. |
| 12 | 31.1 | 24.1 | 98 | 75 | 10 | 9 | 11.2 | ≡ d° a. ● ⊤ ⚡ p. |
| 13 | 31.6 | 23 | 97 | 70 | 6 | 8 | 2.3 | Ω a. ⊤ ⚡ p. |
| 14 | 31.3 | 24.3 | 95 | 58 | 9 | 7 | ------ | ● a. |
| 15 | 32.1 | 23.9 | 94 | 58 | 4 | 7 | ------ | Ω a. ○ p. ⊕ a. p. |
| 16 | 29.5 | 24.5 | 91 | 67 | 10 | 10 | ------ | Ω a. |
| 17 | 32.6 | 23.7 | 86 | 60 | 3 | 9 | ------ | Ω ⊕ a. ⊤ d° ⚡ p. |
| 18 | 32.3 | 23.1 | 86 | 51 | 10 | 8 | 2 | Ω ○ a. ⊕ ⚡ p. |
| 19 | 31 | 23.5 | 90 | 66 | 10 | 8 | ------ | ● a. ⊕ p. |
| 20 | 32 | 23.2 | 90 | 63 | 8 | 5 | ------ | Ω ⊕ a. d° ⚡ p. |
| 21 | 31.7 | 24.4 | 88 | 73 | 8 | 7 | .5 | Ω a. ●° a. p. ⊤ p. |
| 22 | 33.3 | 23.7 | 94 | 59 | 7 | 5 | ------ | Ω a. ⊤$^2$ d° ⌒ ⚡ p. |
| 23 | 30.3 | 22.6 | 95 | 64 | 6 | 7 | ------ | ⊤° d a. ⊕ ●° p. |
| 24 | 30.8 | 23.2 | 94 | 59 | 8 | 7 | 4.8 | Ω a. ⊕$^2$ ⛈ ● p. |
| 25 | 31.6 | 23.4 | 91 | 70 | 5 | 9 | ------ | ⊕ a. ⊤ d° p. |
| 26 | 31.1 | 22.6 | 93 | 62 | 9 | 10 | ------ | Ω a. d° p. |
| 27 | 30.5 | 22 | 95 | 64 | 8 | 9 | ------ | Ω a. ⊤ ⊕ p. |
| 28 | 31.6 | 21.8 | 92 | 70 | 3 | 8 | ------ | Ω a. ⊤ p. |
| 29 | 29.2 | 22 | 97 | 74 | 10 | 10 | ------ | ⊤° Ω a. |
| 30 | 28.6 | 23.8 | 92 | 80 | 10 | 10 | ------ | Ω a. d° p. |
| Mean | 31.6 | 23.4 | 93.2 | 67.4 | 7.2 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 62.9 | |

### DUMAGUETE.

[φ=9° 18′ N; λ=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.5 | 23.2 | 92 | 76 | 10 | 10 | 36.4 | d ⛈ ●$^2$ a. ⌒ ⚡ |
| 2 | 30.3 | 23.2 | 83 | 83 | 10 | 10 | 37.3 | ⛈ ●$^2$ a. ⚡ d p. |
| 3 | 30.6 | 23.9 | 80 | 72 | 10 | 10 | 7.6 | Ω a. d ● p. |
| 4 | 31.7 | 23.5 | 90 | 64 | 10 | 10 | 10.2 | Ω$^2$ a. ⚡° ∪$^2$ p. |
| 5 | 30.6 | 23 | 92 | 69 | 10 | 10 | ------ | ● d° a. ⚡° ∪$^2$ p. |
| 6 | 31 | 24.2 | 84 | 70 | 10 | 5 | 3.3 | Ω$^2$ a. ⚡ ∪ p. |
| 7 | 31 | 23.8 | 89 | 72 | 10 | 5 | 4.5 | ⛈° ● a. d ⚡° ∪ |
| 8 | 31.1 | 24 | 77 | 72 | 10 | 5 | ------ | Ω ⊕ a. ∞° ⚡ p. |
| 9 | 31.5 | 23.4 | 83 | 73 | 8 | 4 | ------ | ⛈ a. ⊕ ∪° ⚡ p. |
| 10 | 31.6 | 23.8 | 82 | 75 | 10 | 10 | 2.5 | ○$^2$ a. ⛈ ∪ ●° p. |
| 11 | 31.8 | 23.9 | 88 | 73 | 10 | 4 | 5.6 | Ω$^2$ a. ⛈° ∪° p. |
| 12 | 30.8 | 24.1 | 94 | 76 | 10 | 10 | 9.7 | ⛈ ● a. ⊂° d ⚡ |
| 13 | 32.8 | 23.4 | 93 | 70 | 10 | 10 | .5 | ● a. ○° d ⚡ p. |
| 14 | 31.2 | 23.9 | 88 | 81 | 10 | 10 | 14.5 | Ω ● a. |
| 15 | 32.3 | 24.2 | 92 | 74 | 10 | 10 | 1.5 | Ω d° a. ⌒° ⚡° d$^2$ p. |
| 16 | 29.2 | 24.2 | 91 | 71 | 10 | 10 | 4.8 | ● a. |
| 17 | 30.6 | 23.6 | ------ | 69 | 10 | 10 | 6.8 | Ω$^2$ d ⊤ a. ● p. |
| 18 | 30.7 | 22.3 | 86 | 75 | 10 | 10 | 2.5 | d a. ●° ⚡° p. |
| 19 | 31.1 | 22.6 | 91 | 76 | 10 | 10 | ------ | ∪$^2$ Ω$^2$ ○ ⊕ a. |
| 20 | 31.4 | 23.5 | 83 | 78 | 10 | 10 | 17 | Ω ● a. ○ p. |
| 21 | 30.9 | 23.8 | 84 | 76 | 10 | 10 | ------ | Ω a. ⚡ p. |
| 22 | 32.2 | 23.2 | 82 | 73 | 10 | 10 | ------ | Ω d ⊤ a. ⚡$^2$ p. |
| 23 | 31.4 | 23.8 | 75 | 74 | 10 | 10 | ------ | Ω ⊤ d$^2$ a. ⚡ p. |
| 24 | 31.6 | 22.8 | 84 | 71 | 10 | 10 | ------ | Ω ⊤ a. ⚡ a. p. |
| 25 | 32 | 23.4 | 80 | 64 | 10 | 10 | 3.5 | d$^2$ a. ○ ⛈ ● p. |
| 26 | 32 | 23.4 | 88 | 75 | 10 | 10 | ------ | Ω ⊕ a. ⚡$^2$ p. |
| 27 | 31.2 | 21.9 | 89 | 73 | 10 | 10 | 2.5 | Ω ⊤ a. ●° p. |
| 28 | 31.3 | 22.1 | 76 | 75 | 8 | 10 | .9 | Ω a. ○ d$^2$ p. |
| 29 | 30.9 | 22.6 | 79 | 69 | 10 | 10 | ------ | Ω a. ⚡ p. |
| 30 | 27.6 | 22.9 | 87 | 85 | 10 | 10 | 5.6 | Ω a. ●° a. p. ⚡° p. |
| Mean | 31.1 | 23.4 | 85.6 | 73.5 | 9.9 | 9.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 177.2 | |

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[1] 22 days of observation.

[2] 28 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.6 | 25.4 | 84 | 72 | 8 | 6 | 3.8 | d° ⌒° ● ☈° p. |
| 2 | 29 | 25 | 89 | 78 | 6 | 9 | 3.8 | ●° d° a. p. ☇ p. |
| 3 | 30.7 | 24 | 88 | 71 | 9 | 6 | 1 | ◯° ●° d° ☇° p. |
| 4 | 31 | 25.3 | 88 | 77 | 4 | 4 | 1.3 | |
| 5 | 30.8 | 24.6 | 88 | 71 | 4 | 6 | ------ | ●° a. ⍦ P. |
| 6 | 31.5 | 25.7 | 84 | 72 | 9 | 5 | 1.8 | ●° p. |
| 7 | 32 | 25.1 | 84 | 64 | 4 | 3 | ------ | ⌒° ⍦ p. |
| 8 | 28.8 | 25 | 92 | 82 | 7 | 8 | 5.8 | ☈ a. ●° ⌒ a. p. |
| 9 | 32.4 | 24.6 | 88 | 72 | 1 | 7 | 9.4 | d° ●° p. |
| 10 | 31.3 | 25 | 94 | 71 | 3 | 3 | 15 | ●° ⌒ ⊕° a. ● p. |
| 11 | 31.3 | 24.7 | 89 | 76 | 6 | 5 | 1.3 | ⌒° ●° p. |
| 12 | 31.5 | 25.4 | 96 | 82 | 8 | 8 | 18.3 | d° ⌒° p. |
| 13 | 31 | 24.6 | 94 | 79 | 8 | 9 | 17.7 | p² ☈° ◯° a. d p. |
| 14 | 31.3 | 23.5 | 86 | 89 | 8 | 10 | 8.1 | ☈ ●° a. p. |
| 15 | 31 | ------ | 93 | 82 | 7 | 4 | 5.1 | ◯° a. ●° a. p. ⌒ p. |
| 16 | 31 | 24.9 | 86 | 78 | 6 | 8 | 2.5 | d° a. p. ● p. |
| 17 | 31.8 | 24.7 | 91 | 65 | 4 | 6 | 8.4 | ⍦ d° a. ● p. |
| 18 | 31.6 | 24.7 | 94 | 75 | 6 | 8 | 1.8 | ⍦° ◯° a. ◯² ⌒° ● p |
| 19 | 31.1 | 25 | 93 | 76 | 6 | 4 | 11.7 | ◯ a. ● p. |
| 20 | 31.1 | ------ | 93 | 81 | 4 | 9 | 5.3 | ◯° a. ●° a. p. |
| 21 | 29.8 | 24 | 87 | 89 | 4 | 9 | .3 | d° a. p. |
| 22 | 31.2 | 24.2 | 91 | 75 | 4 | 7 | .3 | d° a. ∞² p. |
| 23 | 31.9 | 24.6 | 91 | 68 | 3 | 3 | ------ | ⌓ a. ◯° ⌒° p. |
| 24 | 31.9 | 24.6 | 94 | 65 | 1 | 1 | 14.2 | ⌓ a. ●² p. |
| 25 | 30.1 | 24.6 | 98 | 82 | 9 | 8 | 12.2 | d° ●° a. p. |
| 26 | 27.8 | 24.4 | 93 | 89 | 9 | 9 | 24.4 | d° ● a. p. |
| 27 | 30.5 | 24 | 92 | 72 | 9 | 7 | 19.5 | ◯° ●² p. |
| 28 | 32.4 | 23.4 | 98 | 72 | 8 | 9 | ------ | ◯° a. ⌒° d° p. |
| 29 | 31.7 | 24.8 | 85 | 86 | 8 | 9 | 2.5 | d° ☇ p. |
| 30 | 30.4 | 24.6 | 97 | 79 | 8 | 8 | 3.5 | ● d° a. ●° ⊖° ☇ p. |
| Mean | 31 | 24.7 | 90.7 | 76.3 | 6 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 199 | |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33 | 24.2 | 91 | 66 | 10 | 10 | ------ | ⍦ ☇ p. |
| 2 | 33.1 | 24.6 | 92 | 74 | 10 | 10 | 14.5 | ⊤ p a. ⊖ ☇ ⍦ p. |
| 3 | 33 | 23.6 | 91 | 88 | 10 | 10 | 51.3 | d ● a. ● ☈² p. |
| 4 | 31.3 | 23.1 | 91 | 75 | 10 | 10 | ------ | ⌒ d a. |
| 5 | 32.5 | 23 | 92 | 70 | 10 | 10 | ------ | |
| 6 | 32.2 | 24 | 88 | 70 | 10 | 5 | ------ | ⍦ ⊖ ☇ p. |
| 7 | 32.4 | 23.4 | 91 | 75 | 10 | 8 | 21.3 | |
| 8 | 31.1 | 23.6 | 92 | 81 | 10 | 7 | ------ | ● d a. |
| 9 | 31.6 | 24.4 | 91 | 73 | 10 | 10 | ------ | |
| 10 | 30.5 | 24.3 | 88 | 83 | 10 | 10 | 9.7 | ⊤ d a. p. ☇² p. |
| 11 | 30.2 | 25 | 92 | 79 | 10 | 10 | 14.5 | d p ⊤² a. d ☇ p. |
| 12 | 30.1 | 23.8 | 93 | 88 | 10 | 10 | ------ | d ☈ ⍦² p. |
| 13 | 33 | 23.6 | 93 | 81 | 10 | 10 | 5.6 | ● ⌒² ☈² d° p. |
| 14 | 33.2 | 23.6 | 93 | 80 | 10 | 8 | ------ | |
| 15 | 32 | 25.2 | 91 | 83 | 10 | 10 | ------ | |
| 16 | 32 | 25 | 92 | 82 | 10 | 10 | 18.3 | ●² a. |
| 17 | 30.2 | 24.2 | 90 | 84 | 10 | 10 | ------ | ↙° ☇ p. |
| 18 | 31 | 23.8 | 90 | 79 | 10 | 10 | 9.1 | ● d p. |
| 19 | 29.5 | 23.7 | 88 | 82 | 10 | 10 | ------ | |
| 20 | 32.6 | 23.6 | 89 | 85 | 10 | 10 | ------ | |
| 21 | 32 | 23.4 | 88 | 84 | 10 | 10 | ------ | |
| 22 | 32 | 23.6 | 87 | 74 | 10 | 10 | ------ | |
| 23 | 32 | 23.3 | 85 | 75 | 8 | 10 | ------ | d° ⊤² a. |
| 24 | 32 | 23.8 | 90 | 82 | 10 | 10 | ------ | d° ⊤² a. d° ☈ p. |
| 25 | 31 | 23.7 | 93 | 79 | 10 | 10 | 17.3 | ● p. |
| 26 | 30.2 | 23.4 | 93 | 83 | 10 | 10 | ------ | d° ☈² p. |
| 27 | 29.6 | 23.4 | 92 | 79 | 10 | 10 | ------ | ⊤ a. |
| 28 | 30 | 23.6 | 90 | 82 | 10 | 10 | ------ | |
| 29 | 30.8 | 24 | 88 | 78 | 10 | 10 | ------ | d° a. ☈ d p. |
| 30 | 30.8 | 24 | 95 | 88 | 10 | 10 | 14.5 | d a. p. ☇ p. |
| Mean | 31.5 | 23.9 | 90.6 | 79.4 | 9.9 | 9.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 176.1 | |

### SAN JOSE, BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.3 | 23.5 | 90 | 71 | 10 | 10 | 24.1 | ⊤ d ●² ☇ p. |
| 2 | 31.8 | 23.6 | 97 | 85 | 9 | 10 | .5 | ● d a. ☇ p ⊖ p. |
| 3 | 31.9 | 23.6 | 91 | 95 | 9 | 10 | 57.2 | ●² a. ☈ d ● p. |
| 4 | 32.8 | 23 | 91 | 92 | 5 | 10 | 13.2 | ⊤ ● d ☇ p. |
| 5 | 32.7 | 23.1 | 91 | 70 | 10 | 9 | ------ | ☇ p. |
| 6 | 33.3 | 23.7 | 88 | 82 | 9 | 9 | 2.3 | ⌓² a. ⊤ ● ☇ d p. |
| 7 | 33.3 | 24 | 88 | 76 | 8 | 7 | 20.1 | ● ⊤ d ☈ p. |
| 8 | 32.3 | 23.5 | 91 | 95 | 7 | 10 | 42.7 | ● a. ●² ☈ p. |
| 9 | 31.8 | 23.6 | 93 | 79 | 4 | 3 | .3 | ⌒ a. p. ⊤ ●° ☇ p. |
| 10 | 32.7 | 23.6 | 91 | 86 | 5 | 9 | ------ | d² a. ⊤ ☇ d° p. |
| 11 | 33.3 | 23.4 | 90 | 85 | 10 | 10 | 8.7 | ⌓² a. ● ⊤ ☇ p. |
| 12 | 29.8 | 24 | 91 | 88 | 10 | 10 | 35.3 | ⊤ a. ● a. p. ☇ p. |
| 13 | 29.8 | 23.9 | 96 | 88 | 10 | 10 | 36 | ● a. p. |
| 14 | 31.9 | 23.4 | 92 | 74 | 10 | 9 | .8 | ● a. |
| 15 | 32.3 | 23.6 | 95 | 77 | 10 | 8 | 52.6 | ●° a. ⊕ ☇ ●² p. |
| 16 | 29.3 | 23 | 97 | 74 | 10 | 10 | 46 | ●² a. ● ☇ ⊤ p. |
| 17 | 31.4 | 23.4 | 86 | 77 | 10 | 10 | 45.7 | d a. ● ☇ p. |
| 18 | 29.7 | 23 | 96 | 85 | 10 | 10 | 9.9 | ● a. p. d p. |
| 19 | 29.2 | 23.5 | 95 | 88 | 10 | 10 | 24.7 | ● a. p. ⊤ p. |
| 20 | 29.5 | 22 | 92 | 79 | 10 | 10 | 5.8 | ● ⊤ a. ◯ p. |
| 21 | 31.9 | 22.6 | 83 | 77 | 10 | 9 | ------ | ⌓ a. ☇ p. |
| 22 | 32.5 | 22.5 | 79 | 69 | 8 | 8 | ------ | ⌓² a. ⊤ ☇ p. |
| 23 | 32.3 | 22.9 | 82 | 70 | 3 | 8 | 11.4 | ⌓ a. ● ☈ p. |
| 24 | 32.1 | 23 | 88 | 76 | 8 | 7 | .5 | ⊤ a. p. ● ☇ p. |
| 25 | 31.4 | 22.8 | 87 | 78 | 10 | 10 | 42.9 | ⊤ ●² ☇ p. |
| 26 | 30.3 | 22.5 | 96 | 79 | 10 | 10 | 9.2 | ● a. ☇ p. |
| 27 | 29.8 | 23 | 97 | 82 | 10 | 10 | 23.4 | ● ⊤ a. p p. |
| 28 | 30.4 | 23 | 96 | 83 | 10 | 9 | .3 | ●² a. |
| 29 | 32.3 | 23 | 86 | 78 | 9 | 10 | 23.6 | d a. |
| 30 | 26.3 | 23.4 | 96 | 93 | 10 | 10 | 72.1 | ●² a. p. |
| Mean | 31.4 | 23.2 | 91 | 81 | 8.8 | 9.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 609.3 | |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.6 | 24.7 | 95 | 65 | 9 | 9 | 15.2 | d a. ● p. |
| 2 | 31.4 | 24.7 | 94 | 74 | 10 | 9 | 1 | ●° a. ☇ p. |
| 3 | 29.9 | 24.6 | 94 | 77 | 9 | 10 | 25.2 | d° ●² a. |
| 4 | 32.6 | 23.4 | 97 | 69 | 9 | 8 | 2 | ●° ⊤ a. p. |
| 5 | 31.2 | 24.8 | 97 | 77 | 9 | 9 | 10.4 | ◯ p. |
| 6 | 32.2 | 24.8 | 84 | 74 | 9 | 8 | 11.9 | ● a. p. |
| 7 | 32.7 | 24.7 | 98 | 62 | 9 | 8 | 26.9 | ● a. ☈ ●² p. |
| 8 | 32.2 | 23.6 | 96 | 70 | 9 | 9 | 15.2 | ☈ ● a. p. |
| 9 | 32.6 | 24.7 | 97 | 68 | 8 | 7 | ------ | d° a. ◯ d ☇ p. |
| 10 | 32.3 | 24.5 | 96 | 67 | 9 | 7 | 6.3 | ●° ⊤ p. |
| 11 | 31.8 | 24.8 | 94 | 67 | 9 | 9 | 104.6 | ● a. p. ☈² ●² p. |
| 12 | 28.7 | 23.7 | 93 | 81 | 10 | 10 | 40.3 | ⊤ a. ● a. p. |
| 13 | 29.6 | 24 | 98 | 79 | 10 | 10 | 16 | d ● a. |
| 14 | 32 | 23.8 | 97 | 66 | 9 | 6 | ------ | ● a. d° p. |
| 15 | 31.8 | 24.5 | 95 | 72 | 8 | 8 | 17.5 | ⌓² a. ● a. p. |
| 16 | 29.7 | 24 | 98 | 77 | 10 | 10 | .8 | d² a. p. |
| 17 | 31.3 | 26.2 | 82 | 70 | 10 | 10 | 15.7 | |
| 18 | 31.2 | 23.6 | 94 | 91 | 10 | 10 | 4.6 | ● a. p. |
| 19 | 26.6 | 24.9 | 90 | 95 | 10 | 10 | 17 | ● a. p. d² p. |
| 20 | 29 | 24.1 | 89 | 77 | 10 | 10 | ------ | |
| 21 | 32 | 25.5 | 94 | 75 | 10 | 9 | ------ | d p. |
| 22 | 32.4 | 24 | 96 | 66 | 9 | 8 | .8 | ●° a. |
| 23 | 32.8 | 23.7 | 96 | 64 | 7 | 7 | 1.8 | ☇ p. |
| 24 | 32.2 | 25.4 | 93 | 66 | 8 | 8 | 1.3 | ●° a. p. |
| 25 | 30.8 | 25.6 | 92 | 78 | 9 | 10 | 26.4 | ⊤° ●² p. |
| 26 | 30.7 | 23.1 | 94 | 75 | 10 | 9 | 8.9 | d° ☈ p. |
| 27 | 30.3 | 23.1 | 97 | 77 | 9 | 10 | 7.6 | d° ⊤ p. |
| 28 | 31.5 | 23.6 | 97 | 72 | 10 | 9 | 7.1 | ● d° a. |
| 29 | 30.6 | 23.5 | 96 | 73 | 10 | 9 | 12.4 | ● a. d p. |
| 30 | 27 | 23.7 | 96 | 91 | 10 | 10 | 54.6 | ● a. ●² p. |
| Mean | 31.1 | 24.3 | 94.3 | 73.8 | 9.3 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 451.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 30.2 | 23 | 97 | 75 | 9 | 8 | 38.6 | ● a. p. ↯ p. |
| 2 | 29.9 | 23.1 | 97 | 76 | 10 | 7 | 7.9 | ● a. ↯ p. |
| 3 | 31 | 23 | 97 | 91 | 8 | 7 | 18.8 | ⌒ ≡ a. ● ↯ p. |
| 4 | 31.2 | 22.6 | 97 | 70 | 4 | 6 | 11.9 | ≡ ⌒ ○ a. ● p. |
| 5 | 31 | 22.6 | 97 | 69 | 4 | 10 | 23.8 | ≡ a. ● a. p. ↯ p. |
| 6 | 30.4 | 23.2 | 97 | 71 | 6 | 4 | 15.3 | ≡ ○ ●° a. ● ↯ p. |
| 7 | 30.9 | 22.8 | 98 | 69 | 4 | 4 | .3 | ≡ ● a. |
| 8 | 31.2 | 23 | 97 | 75 | 5 | 7 | 1 | Ω ● a. d ↯ ψ p. |
| 9 | 31.5 | 23.5 | 97 | 72 | 7 | 6 | 12.7 | Ω ● a. ⊤ ● ↯ p. |
| 10 | 31.7 | 23.6 | 97 | 72 | 6 | 7 | 16. | ● ⌒ a. p. |
| 11 | 29 | 24 | 97 | 85 | 9 | 7 | 14.7 | ● ⊤ ↯ a. ⊤ d p. |
| 12 | 31 | 23.5 | 96 | 85 | 4 | 6 | 1.5 | ● ≡° a. ψ p. |
| 13 | 32 | 23 | 97 | 76 | 4 | 8 | 16.8 | Ω ≡ a. ● ↯ p. |
| 14 | 32.4 | 23.2 | 97 | 64 | 6 | 5 | ------ | ⊤ ↯ p. |
| 15 | 33.8 | 23.2 | 93 | 60 | 2 | 4 | ------ | Ω ○ a. ↯ p. |
| 16 | 33.4 | 23.8 | 94 | 65 | 4 | 6 | ------ | Ω ○ a. |
| 17 | 32.4 | 25.7 | 81 | 63 | 6 | 7 | ------ | ⊕ a. ↯ p. |
| 18 | 32.3 | 23.2 | 96 | 68 | 4 | 7 | .3 | Ω ≡° a. ↯ ● p. |
| 19 | 31.3 | 23.2 | 96 | 70 | 7 | 9 | ------ | |
| 20 | 34.1 | 23 | 95 | 57 | 6 | 8 | ------ | |
| 21 | 31 | 23.8 | 97 | 76 | 9 | 7 | .5 | ● a. |
| 22 | 32.9 | 22.5 | 94 | 65 | 4 | 5 | ------ | Ω a. |
| 23 | 32.4 | 23.2 | 94 | 71 | 4 | 7 | 1.3 | ● p. |
| 24 | 31.7 | 23 | 96 | 70 | 4 | 4 | ------ | ↯ p. |
| 25 | 32.3 | 22.5 | 97 | 71 | 2 | 7 | 3 | Ω ≡ a. ⊤ ● ↯² p. |
| 26 | 31.5 | 23.3 | 91 | 74 | 4 | 5 | ------ | |
| 27 | 32.9 | 21.8 | 98 | 60 | 4 | 8 | 1 | Ω ≡ a. ⊤ ● p. |
| 28 | 32 | 21.9 | 98 | 78 | 4 | 7 | 1 | Ω ≡ a. ⊤ ● ↯ p. |
| 29 | 29.5 | 22.9 | 97 | 88 | 4 | 8 | 3.9 | Ω ⊤ a. ●° p. |
| 30 | 25.5 | 23.5 | 96 | 88 | 9 | 9 | 39.4 | ● a. p. |
| Mean | 31.4 | 23.2 | 95.7 | 72.5 | 5.4 | 6.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 229.7 | |

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 32 | 25.5 | 84 | 76 | 9 | 10 | ------ | |
| 2 | 32 | 24.6 | 92 | 63 | 10 | 10 | ------ | |
| 3 | 33 | 25.2 | 90 | 55 | 8 | 7 | ------ | |
| 4 | 33.5 | 24.2 | 96 | 58 | 9 | 8 | ------ | |
| 5 | 33 | 25.5 | 90 | 58 | 9 | 8 | ------ | |
| 6 | 32 | 25.2 | 97 | 65 | 9 | 6 | ------ | |
| 7 | 33 | 26.2 | 84 | 66 | 8 | 7 | ------ | |
| 8 | 33.6 | 25.5 | 90 | 56 | 8 | 6 | ------ | |
| 9 | 34.2 | 25.8 | 90 | 53 | 8 | 4 | ------ | |
| 10 | 33.2 | 25.5 | 92 | 65 | 8 | 8 | ------ | |
| 11 | 33.5 | 25 | 95 | 62 | 8 | 7 | ------ | |
| 12 | 34 | 25.6 | 90 | 58 | 9 | 8 | ------ | |
| 13 | ------ | 25.5 | 92 | ------ | 8 | ------ | ------ | |
| 14 | 31.5 | 24.8 | 89 | 66 | 8 | 8 | ------ | |
| 15 | 30.8 | 26.2 | 75 | 71 | 8 | 8 | ------ | |
| 16 | 30.2 | 27.5 | 88 | 80 | 9 | 10 | 1.5 | |
| 17 | 30.2 | 27 | 83 | 71 | 10 | 10 | ------ | |
| 18 | 31.2 | 26.5 | 88 | 68 | 10 | 10 | ------ | |
| 19 | 29.5 | 24.5 | 89 | 72 | 10 | 10 | ------ | |
| 20 | 32.4 | 24.2 | 95 | 62 | 10 | 10 | ------ | |
| 21 | 31.8 | 25.2 | 87 | 86 | 7 | 10 | 23.9 | |
| 22 | 33.2 | 24.8 | 97 | 61 | 8 | 7 | ------ | |
| 23 | 33 | 25 | 90 | 64 | 8 | 7 | 3.3 | |
| 24 | 32.6 | 25.4 | 92 | 73 | 9 | 9 | ------ | |
| 25 | 31.8 | 25.4 | 92 | 64 | 9 | 9 | ------ | |
| 26 | 31.5 | 26 | 82 | 75 | 10 | 9 | ------ | |
| 27 | 31.2 | 25.6 | 89 | 70 | 9 | 9 | 1.5 | |
| 28 | ------ | 25.6 | 87 | ------ | 10 | ------ | ------ | |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| Mean | 32.2 | 25.5 | 89.5 | 66.1 | 8.8 | 8.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 30.2[1] | |

### ROMBLON.

[$\phi$=12° 35′ N; $\lambda$=122° 16′ E.]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 11 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 12 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 13 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 14 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 15 | ------ | 24.2 | 84 | 61 | 6 | 7 | ------ | |
| 16 | ------ | 25.9 | 78 | 64 | 8 | 8 | ------ | d° a. p. |
| 17 | ------ | 26.1 | 80 | 63 | 7 | 7 | 2.8 | ↯ ● p. |
| 18 | ------ | 24.6 | 81 | 80 | 9 | 10 | 7.3 | ⌒ a. ● a. p. |
| 19 | ------ | 24.6 | 86 | 94 | 10 | 10 | 15.3 | d ● a. ●° p. |
| 20 | ------ | 23.1 | 93 | 81 | 10 | 10 | .8 | ●° p. |
| 21 | ------ | 23.8 | 93 | 65 | 9 | 8 | ------ | ○ a. |
| 22 | ------ | 23.6 | 97 | 59 | 2 | 4 | ------ | Ω a. |
| 23 | ------ | 23.1 | 97 | 63 | 2 | 4 | ------ | Ω° a. |
| 24 | ------ | 23.8 | 94 | 66 | 5 | 6 | ------ | ⊤² a. |
| 25 | ------ | 24.2 | 95 | 69 | 4 | 6 | ------ | Ω° a. ⌈↯ p. |
| 26 | ------ | 25.6 | 81 | 66 | 7 | 4 | ------ | ⌈↯² p. |
| 27 | ------ | 25 | 83 | 64 | 7 | 5 | ------ | ↯ p. |
| 28 | ------ | 24.3 | 82 | 63 | 8 | 5 | ------ | ↯ p. |
| 29 | ------ | 23.8 | 95 | 66 | 9 | 7 | .8 | |
| 30 | ------ | 24.3 | 83 | 75 | 10 | 10 | 21.9 | ●° a. d° p. |
| Mean | ------ | 24.4 | 87.6 | 68.7 | 7.1 | 6.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* | |
| 1 | 30.1 | 23.7 | 95 | 71 | 9 | 9 | 1.8 | |
| 2 | 30.5 | 23 | 96 | 79 | 10 | 9 | 1.3 | |
| 3 | ------ | 22.6 | 97 | 73 | 5 | 5 | ------ | |
| 4 | 30.6 | 22.5 | 96 | 71 | 7 | 6 | 6.9 | |
| 5 | 30.1 | 23 | 96 | 99 | 7 | 9 | 7.6 | |
| 6 | 31 | 23.1 | 99 | 75 | 7 | 7 | ------ | |
| 7 | 30.6 | 23.1 | 98 | 78 | 5 | 5 | 2.5 | |
| 8 | 31.5 | 23.5 | 98 | 75 | 3 | 7 | ------ | |
| 9 | 31.9 | 23.5 | 98 | 72 | 5 | 6 | 1.3 | |
| 10 | 30.6 | 23.9 | 97 | 85 | 7 | 7 | 7.1 | |
| 11 | 31 | 24.2 | 96 | 78 | 9 | 9 | 8.3 | |
| 12 | 31 | 23.5 | 96 | 81 | 3 | 8 | 4.8 | |
| 13 | 31.1 | 23.1 | 88 | 80 | 7 | 8 | ------ | |
| 14 | 32.3 | 23.1 | 87 | 69 | 5 | 5 | ------ | |
| 15 | 32.5 | 24 | 93 | 66 | 8 | 7 | ------ | |
| 16 | 31.6 | 25 | 93 | 76 | 6 | 9 | ------ | |
| 17 | 32.1 | 24.7 | 86 | ------ | 7 | 8 | ------ | |
| 18 | 32.2 | 24.1 | 88 | 68 | 9 | 8 | 1 | |
| 19 | 30.6 | 23.8 | 91 | 75 | 9 | 8 | ------ | |
| 20 | 32 | 23 | 96 | 63 | 6 | 7 | ------ | |
| 21 | 32.6 | 24.3 | 92 | 62 | 7 | 8 | 1.3 | |
| 22 | 31.6 | 23.1 | 96 | 69 | 5 | 5 | ------ | |
| 23 | 32 | 23.5 | 96 | 69 | 4 | 5 | ------ | |
| 24 | 32 | 23.6 | 96 | 72 | 4 | 5 | ------ | |
| 25 | 32.5 | 23.6 | 90 | 55 | 5 | 7 | ------ | |
| 26 | 33 | 24.4 | 96 | 65 | 5 | 7 | ------ | |
| 27 | 33.2 | 22 | 92 | 94 | 6 | 10 | 27.9 | |
| 28 | 31.5 | 24.3 | 97 | 81 | 9 | 9 | .8 | |
| 29 | 28.5 | 24 | 93 | 92 | 8 | 10 | 24.4 | |
| 30 | 26.6 | 23 | 96 | 92 | 10 | 10 | 64.2 | |
| Mean | 31.3 | 23.5 | 94.3 | 75.3 | 6.6 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 161.2 | |

[1] 28 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.5 | 24.9 | 87 | 64 | 8 | 10 | 4.3 | d ● p. |
| 2 | 29.9 | 23 | 94 | 81 | 8 | 6 | ------ |  |
| 3 | 31 | 23 | 95 | 71 | 6 | 7 | ------ |  |
| 4 | 31 | 23.9 | 93 | 69 | 10 | 10 | 3.8 | d² p. |
| 5 | 30.8 | 23.3 | 95 | 72 | 8 | 7 | 20.1 | d a. ● ⊤ p. |
| 6 | 30.6 | 23.4 | 96 | 75 | 8 | 6 | 3 | d p. |
| 7 | 30.9 | 24.2 | 95 | 76 | 7 | 7 | 8.6 | d a. ● p. |
| 8 | 31.2 | 24.1 | 96 | 73 | 8 | 7 | ------ | d p. |
| 9 | 31.6 | 23.5 | 95 | 75 | 7 | 9 | 10.2 |  |
| 10 | 30.7 | 24.2 | 95 | 75 | 8 | 8 | 52.8 | ●° a. ●² p. |
| 11 | 29.4 | 24.4 | 98 | 81 | 10 | 10 | 2.5 | ● ⛈ d a. ⊤ p. |
| 12 | 31.4 | 23.9 | 96 | 76 | 8 | 10 | 2.5 | d a. |
| 13 | 31.2 | 23.6 | 98 | 85 | 8 | 8 | ------ | ●° a. d° p. |
| 14 | 32.6 | 23 | 96 | 64 | 7 | 7 | ------ |  |
| 15 | 32.1 | 25.1 | 92 | 64 | 7 | 7 | ------ | d a. |
| 16 | 32 | 26.6 | 86 | 72 | 7 | 8 | ------ | d p. |
| 17 | 31.7 | 26 | 87 | 68 | 10 | 10 | 16 | ⛈ ● p. |
| 18 | 30.8 | 24.8 | 89 | 73 | 7 | 8 | ------ |  |
| 19 | 30 | 24.8 | 88 | 74 | 6 | 7 | ------ |  |
| 20 | 31 | 24.7 | 92 | 75 | 6 | 6 | ------ | ⊤ p. |
| 21 | 32 | 24.1 | 95 | 72 | 10 | 8 | ------ | ⊤ d p. |
| 22 | 31.5 | 23.4 | 92 | 66 | 6 | 7 | ------ |  |
| 23 | 31.9 | 23.2 | 92 | 70 | 7 | 8 | ------ |  |
| 24 | 32.1 | 23.1 | 92 | 70 | 8 | 8 | ------ | ⊤ p. |
| 25 | 32.5 | 23.4 | 95 | 68 | 7 | 7 | ------ |  |
| 26 | 33 3 | 24.5 | 92 | 63 | 7 | 9 | ------ | ⊤ p. |
| 27 | 33 | 25.3 | 90 | 63 | 10 | 8 | ------ | ⊤ ⌒° d p. |
| 28 | 33.3 | 24.5 | 89 | 63 | 6 | 10 | ------ | ⊤ ⚡ p. |
| 29 | 31.3 | 24.5 | 94 | 78 | 10 | 8 | 10.4 | ●° ⊤ p. |
| 30 | 27 | 24.9 | 96 | 91 | 8 | 8 | 108.9 | d a. ●² p. |
| Mean | 31.3 | 24.2 | 93 | 72.2 | 7.8 | 8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 243.1 |  |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.2 | 24.6 | 84 | 71 | 10 | 8 | ------ |  |
| 2 | 30 | 25.2 | 84 | 68 | 10 | 10 | ------ |  |
| 3 | 29.6 | 25.2 | 86 | 77 | 10 | 10 | 2 |  |
| 4 | 29.4 | 25.4 | 84 | 71 | 10 | 10 | ------ |  |
| 5 | 30.8 | 25.4 | 81 | 65 | 10 | 10 | 3.8 |  |
| 6 | 30.8 | 24.6 | 84 | 66 | 10 | 8 | ------ |  |
| 7 | 31.4 | 23.6 | 78 | 62 | 10 | 8 | 5.1 |  |
| 8 | 30.2 | 25.2 | 84 | 71 | 5 | 10 | 2.5 |  |
| 9 | 29.8 | 25 | 84 | 71 | 3 | 6 | 2.5 |  |
| 10 | 29.4 | 24.8 | 86 | 74 | 10 | 10 | 6.4 |  |
| 11 | 29 | 26.4 | 83 | 78 | 10 | 10 | 3.3 |  |
| 12 | 27.6 | 25.6? | 92 | 97 | 10 | 10 | 74.9 |  |
| 13 | 31 | 22.8 | 81 | 65 | 10 | 10 | ------ |  |
| 14 | 31 | 24.6 | 84 | 71 | 10 | 10 | ------ |  |
| 15 | 30.4 | 25.2 | 84 | 71 | 8 | 8 | 40.6 |  |
| 16 | 31 | 25.4 | 87 | 65 | 10 | 5 | ------ |  |
| 17 | 32 | 23 | 84 | 68 | 5 | 4 | ------ |  |
| 18 | 28 | 24.4 | 90 | 84 | 6 | 10 | 10.2 |  |
| 19 | 31 | 24.6 | 84 | 68 | 10 | 7 | 1.3 |  |
| 20 | 29.6 | 24 | 92 | 73 | 10 | 9 | 1.3 |  |
| 21 | 31 | 24 | 84 | 71 | 6 | 6 | ------ |  |
| 22 | 30.6 | 24 | 84 | 79 | 4 | 10 | 5.1 |  |
| 23 | 30 6 | 23.8 | 88 | 77 | 8 | 10 | 2.1 |  |
| 24 | 30.8 | 23.8 | 92 | 65 | 7 | 7 | 3.8 |  |
| 25 | 30.6 | 24 | 86 | 71 | 10 | 8 | 7.7 |  |
| 26 | 29.6 | 24 | 87 | 80 | 10 | 10 | 27.9 |  |
| 27 | 28.4 | 24 | 89 | 87 | 10 | 10 | 15.3 |  |
| 28 | 30 | 24 | 84 | 71 | 10 | 10 | 2 |  |
| 29 | 29.2 | 24 | 84 | 75 | 8 | 10 | 2.5 |  |
| 30 | 30 | 26 | 84 | 71 | 10 | 10 | ------ |  |
| Mean | 30.1 | 24.6 | 85.3 | 72.8 | 8.7 | 8.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 220.3 |  |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.6 | 24.2 | 98 | 76 | 10 | 10 | 2.3 | ●° p p. |
| 2 | 31.6 | 24.1 | 97 | 73 | 10 | 10 | .3 | d° a. |
| 3 | 32 | 24 | 83 | 66 | 10 | 10 | .5 | d° ●° a. ⊤ a. p. |
| 4 | 32.5 | 23.4 | 89 | 62 | 10 | 7 | .5 | ●° p. |
| 5 | 32.5 | 24.1 | 92 | 62 | 10 | 6 | 13.2 | d° a. ⊤ ● p. |
| 6 | 32.6 | 23.3 | 95 | 63 | 10 | 10 | 117.6 | ● a. ⛈ ●² p. |
| 7 | 32.1 | 23.3 | 98 | 68 | 10 | 9 | 5.1 | d² a. p. |
| 8 | 32.4 | 24.3 | 97 | 71 | 10 | 6 | 49.3 | d° ●² a. ⛈ a. p. |
| 9 | 32.8 | 24.5 | 95 | 70 | 8 | 6 | 1.5 | ⊤ a. ⊍ ⦶ ⛈ p. |
| 10 | 32.6 | 23 | 92 | 67 | 10 | 8 | .9 | ⊤ a. d ⛈ p. |
| 11 | 32 | 25.1 | 88 | 72 | 9 | 10 | 1.1 | ● ⊤ ⚡ p. |
| 12 | 31.7 | 24.1 | 97 | 69 | 10 | 10 | 28.4 | ⛈ ●² p. |
| 13 | 30.7 | 24 | 95 | 86 | 10 | 10 | .5 | ⛈ a. p p. |
| 14 | 30.6 | 23 | 97 | 72 | 10 | 10 | ------ |  |
| 15 | 32.7 | 23.1 | 91 | 75 | 10 | 10 | ------ |  |
| 16 | 32.5 | 24.4 | 88 | 70 | 10 | 10 | ------ | ⊤ a. |
| 17 | 30 | 24.5 | 78 | 81 | 10 | 10 | 1 | ●° p. |
| 18 | 29.8 | 23.6 | 97 | 77 | 10 | 10 | 4.6 | d a. p. ●° p. |
| 19 | 28.5 | 23.3 | 99 | 83 | 10 | 10 | 9.4 | d² a. p, |
| 20 | 28.8 | 23.9 | 98 | 82 | 10 | 10 | .5 | d a. |
| 21 | 31.6 | 23 | 97 | 72 | 10 | 8 | ------ | ⌒° ⛈ p. |
| 22 | 32.1 | 22.5 | 80 | 69 | 7 | 4 | ------ |  |
| 23 | 30.6 | 22.8 | 86 | 75 | 1 | 8 | ------ | ⚡ p. |
| 24 | 31.2 | 22.9 | 87 | 75 | 10 | 10 | ------ |  |
| 25 | 31 | 22.8 | 88 | 79 | 9 | 10 | ------ | ⊤ p. |
| 26 | 31.8 | 23 | 86 | 70 | 10 | 10 | ------ | ⚡ p. |
| 27 | 32.2 | 23.5 | 89 | 74 | 10 | 10 | ------ | ⊤ p. |
| 28 | 32.5 | 24 | 83 | 71 | 10 | 10 | ------ | ⊤ p. |
| 29 | 31.2 | 22.8 | 91 | 73 | 10 | 10 | ------ | ⛈ ●° p. |
| 30 | 29.9 | 26.4 | 83 | 77 | 10 | 10 | 8.9 | ↙° ● p. |
| Mean | 31.5 | 23.7 | 91.1 | 72.7 | 9.5 | 9.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 245.6 |  |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$= 124° 14′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.6 | 23.2 | 87 | 75 | 8 | 9 | 1.2 | ● a. |
| 2 | 34.6 | ------ | 96 | ------ | 10 | 10 | 8.2 | ● a. |
| 3 | 33.6 | 22.2 | 96 | 65 | 8 | 6 | ------ |  |
| 4 | 33.4 | 23 | 95 | 63 | 10 | 8 | 9.9 |  |
| 5 | 33.2 | 23.2 | 96 | 65 | 9 | 7 | 15.6 | ⌒ a. ● a. p. |
| 6 | 32.6 | 22.8 | 90 | 65 | 10 | 8 | .6 | ● a. p p. |
| 7 | 33.4 | 23.5 | 92 | 72 | 5 | 7 | 4.6 | ● p. |
| 8 | 33 | 23.6 | 93 | 73 | 2 | 8 | 23.9 | ⊤ a. ● a. p. |
| 9 | 33 | 24 | 97 | 66 | 8 | 6 | ------ | ●² a. |
| 10 | 33.5 | 23.6 | 94 | 66 | 4 | 7 | 7.2 | Ω a. p ⚡ p. |
| 11 | 33.5 | 24.2 | 97 | 66 | 10 | 9 | 3.9 | ⊤ a. ●° a. p. |
| 12 | 32.8 | 24 | 93 | 71 | 8 | 9 | ------ | d a. |
| 13 | 33.4 | 23.5 | 95 | 63 | 8 | 7 | .8 | ⌒² ●° a. |
| 14 | 34 | 24 | 91 | 61 | 4 | 4 | ------ | Ω a. |
| 15 | 34 | 24.5 | 92 | 61 | 6 | 8 | ------ |  |
| 16 | 33.4 | 25.5 | 87 | 66 | 10 | 10 | .3 | ●° p. |
| 17 | 33.4 | 25 | 86 | 63 | 10 | 10 | ------ |  |
| 18 | 31.5 | 25 | 86 | 66 | 10 | 10 | 1.3 | ⚡ p. |
| 19 | 30.5 | 24.4 | 89 | 75 | 10 | 10 | ------ | ● a. |
| 20 | 31.8 | 24 | 85 | 75 | 10 | 9 | ------ |  |
| 21 | 33.4 | 23 | 93 | 71 | 9 | 9 | ------ |  |
| 22 | 34.5 | 22.6 | 92 | 63 | 4 | 4 | ------ |  |
| 23 | 34.5 | 23 | 88 | 60 | 3 | 7 | ------ | Ω a. |
| 24 | 34.2 | 22.5 | 91 | 56 | 6 | 9 | ----- | p° a. |
| 25 | 35 | 24 | 93 | 56 | 5 | 8 | ------ |  |
| 26 | 34.6 | 24 | 93 | 70 | 9 | 7 | ------ |  |
| 27 | 35 | 24.8 | 93 | 64 | 10 | 9 | ------ | ⊤ p. |
| 28 | 35 | 24 | 92 | 60 | 10 | 9 | 17.8 | ⊤ ● ⚡ p. |
| 29 | 32.2 | 23.8 | 96 | 86 | 10 | 8 | 41.3 | ● p p. |
| 30 | 29 | 23 | 88 | 93 | 10 | 10 | 126.2 | ●² a. p. ↙° p. |
| Mean | 33.3 | 23.7 | 91.9 | 67.4 | 7.9 | 8.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 262.8 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### NUEVA CACERES.

[φ=13° 37′ N; λ=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. c . | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 33 | 22.4 | 97 | 67 | 8 | 9 | ------ |  |
| 2 | 32.5 | 22 | 96 | 70 | 10 | 10 | ------ |  |
| 3 | 34.1 | 21.7 | 98 | 64 | 8 | 9 | ------ |  |
| 4 | 34.4 | 21.3 | 97 | 82 | 8 | 9 | 15.6 | ● p. |
| 5 | 31.9 | 21.5 | 98 | 81 | 8 | 9 | 1 | ●° ⊤° p. |
| 6 | 32.6 | 21.7 | 98 | 71 | 7 | 8 | 6.6 | ●° ⊤° p. |
| 7 | 33.2 | 21.6 | 97 | 62 | 7 | 9 | 17.8 | ● ⊤° p. |
| 8 | 32.6 | 21.8 | 98 | 85 | 6 | 10 | 4.7 | ●° ⊤° p. |
| 9 | 33.9 | 22 | 98 | 68? | 5 | 9 | ------ | ⊤° p. |
| 10 | 32.2 | 22.4 | 98 | 79 | 10 | 10 | 10.5 | ∞° a. ●° ⊤° p. |
| 11 | 33.5 | 21.7 | 97 | 82 | 6 | 8 | 13.5 | ● p. |
| 12 | 33.2 | 22.3 | 98 | 83 | 7 | 8 | 1.1 | ●° a. ⊤° p. |
| 13 | 33.6 | 21.7 | 98 | 69 | 5 | 9 | 3 | ⊤° ●° p. |
| 14 | 33.2 | 22.6 | 97 | 65 | 6 | 8 | ------ |  |
| 15 | 33.6 | 22.6 | 97 | 61 | 7 | 8 | ------ |  |
| 16 | 33.7 | 23.7 | 95 | 60 | 9 | 9 | ------ |  |
| 17 | 33.6 | 24.5 | 95 | 67 | 9 | 10 | 15.2 | ● p. |
| 18 | 31 | 23.4 | 96 | 83 | 10 | 10 | 12.5 | ● ⊤° p. |
| 19 | 29.1 | 23.4 | 95 | 75 | 10 | 10 | 24.4 | ●° a. d ●² p. |
| 20 | 31 | 22.6 | 94 | 69 | 10 | 10 | 1.3 | ●° p. |
| 21 | 34.4 | 22.3 | 97 | 52 | 8 | 7 | ------ |  |
| 22 | 34.9 | 22 | 97 | 54 | 4 | 9 | ------ | ≡ a. |
| 23 | 35 | 22.5 | 95 | 56 | 3 | 6 | ------ | ⊤° p. |
| 24 | ------ | 22.3 | 95 | 53 | 8 | 9 | ------ | ⊤° p. |
| 25 | 34.7 | 22.7 | ------ | 63 | 8 | 8 | ------ |  |
| 26 | 33.4 | 22.5 | 95 | 64 | 9 | 8 | ------ |  |
| 27 | 33.5 | 23.5 | 93 | 64 | 10 | 8 | ------ |  |
| 28 | 33.7 | 23.2 | 96 | 63 | 10 | 8 | ------ |  |
| 29 | 34.1 | 22.3 | 95 | 64 | 9 | 9 | 2.3 |  |
| 30 | 26.2 | 22 | 98 | 95 | 10 | 10 | 82.5 | d a. ●² p. |
| Mean | 33 | 22.4 | 96.5 | 69 | 7.8 | 8.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 212 |  |

### BATANGAS.

[φ=13° 45′ N; λ=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.5 | 22.7 | 96 | 87 | 4 | 10 | 6.6 | d² ⊤ p. |
| 2 | 33 | 22 | 97 | 67 | 6 | 7 | ------ |  |
| 3 | 32.4 | 23.5 | 92 | 74 | 5 | 7 | ------ |  |
| 4 | 35.4 | 23.1 | 97 | 49 | 5 | 5 | ------ |  |
| 5 | 35 | 23.7 | 93 | 60 | 4 | 5 | ------ |  |
| 6 | 34.6 | 23.2 | 92 | 54 | 4 | 6 | ------ | ⊤ p. |
| 7 | 33.8 | 24.5 | 92 | 59 | 3 | 6 | ------ |  |
| 8 | ------ | 23.2 | 92 | 51 | 4 | 5 | ------ |  |
| 9 | 36.3 | 24.6 | 91 | 49 | 7 | 5 | ------ |  |
| 10 | 35 | 24.6 | 93 | 61 | 4 | 6 | ------ |  |
| 11 | 34.5 | 23.6 | 92 | 94 | 4 | 10 | 18.3 | ⊤ ● a. p. |
| 12 | 34.5 | 22.5 | 97 | 55 | 4 | 7 | ------ |  |
| 13 | 32.7 | 24.4 | 93 | 94 | 10 | 10 | 25.4 | ●² ⊤² p. |
| 14 | 31.3 | 22.5 | 97 | 68 | 5 | 6 | ------ |  |
| 15 | 32.3 | 22.9 | 95 | 66 | 4 | 4 | 2 |  |
| 16 | 31.2 | 24.2 | 97 | 74 | 10 | 6 | 3.6 | ● a. ◯ d p. |
| 17 | 28.3 | 23.3 | 88 | 87 | 9 | 9 | 104.6 | ●² a. p. |
| 18 | 29.8 | 23.1 | 97 | 87 | 10 | 9 | 8.4 | ● a. d² p. |
| 19 | 29 | 23.3 | 96 | 88 | 10 | 10 | 19 | d² a. p. |
| 20 | 31.4 | 23 | 97 | 69 | 10 | 10 | 1.3 | d° a. |
| 21 | 32.8 | 23.3 | 97 | 53 | 7 | 6 | ------ |  |
| 22 | 32.7 | 22.3 | 97 | 60 | 5 | 3 | ------ |  |
| 23 | 32.8 | 23 | 93 | 60 | 1 | 5 | ------ |  |
| 24 | 32.7 | 23.3 | 97 | 71 | 4 | 5 | ------ |  |
| 25 | 33 | 23.7 | 96 | 66 | 5 | 6 | ------ |  |
| 26 | 33.3 | 24 | 96 | 66 | 6 | 6 | ------ |  |
| 27 | 33.8 | 24.8 | 91 | 73 | 7 | 7 | ------ | d° p. |
| 28 | 33.2 | 24 | 93 | 62 | 6 | 5 | ------ |  |
| 29 | 33.1 | 23.5 | 95 | 82 | 4 | 7 | 1 | d° ⊤ p. |
| 30 | 33.4 | 23 | 97 | 75 | 6 | 7 | 54.4 | ●² p. |
| Mean | 32.9 | 23.4 | 94.5 | 68.7 | 5.8 | 6.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 244.6 |  |

### SILANG.

[φ=14° 14′ N; λ=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 29.3 | 21.4 | 97 | 68 | 7 | 8 | 4.1 | ⚑° d ●° p. |
| 2 | 30.7 | 21.9 | 98 | 63 | 5 | 8 | ------ | Ω ≡ a. |
| 3 | 30 | 21 | 98 | 68 | 2 | 9 | ------ | d ⚑ p. |
| 4 | 30.2 | 20.3 | 98 | 64 | 9 | 6 | ------ |  |
| 5 | 30.7 | 20.6 | 98 | 65 | 2 | 8 | ------ | d p. |
| 6 | 29.5 | 21.5 | 98 | 66 | 2 | 5 | ------ |  |
| 7 | 31.3 | 22 | 97 | 62 | 7 | 2 | ------ |  |
| 8 | 31 | 21.6 | 98 | 64 | 4 | 8 | ------ | ⊤ d p. |
| 9 | 31.8 | 21 | 98 | 65 | 2 | 8 | ------ | d p. |
| 10 | 30.5 | 22 | 98 | 64 | 2 | 4 | ------ |  |
| 11 | 31.1 | 21.8 | 97 | 70 | 7 | 9 | 4.3 | ●° p. |
| 12 | 29.7 | 21.1 | 98 | 63 | 5 | 7 | ------ | ≡ a. d ⚑ p. |
| 13 | 30.4 | 21 | 98 | 69 | 8 | 9 | 57.9 | Ω ≡ a. d ⊤° ●² p. |
| 14 | 28.8 | 21.5 | 98 | 69 | 2 | 7 | ------ | d p. |
| 15 | 29.5 | 21.2 | 97 | 69 | 5 | 8 | 23.1 | ● p. |
| 16 | 30.5 | 20.9 | 98 | 70 | 10 | 6 | 4.1 | ●° a. |
| 17 | 28.6 | 20.4 | 98 | 72 | 3 | 7 | 11.2 | ⊤° a. ● p. |
| 18 | 28.8 | 20 | 98 | 72 | 8 | 8 | 3.8 | Ω ●° a. |
| 19 | 28 | 19.6 | 97 | 76 | 10 | 9 | 6.4 | ● p. |
| 20 | 27.7 | 18.8 | 98 | 68 | 10 | 8 | ------ |  |
| 21 | 29.1 | 20.2 | 98 | 70 | 3 | 8 | ------ | d ⚑ p. |
| 22 | 29.9 | 21 | 98 | 69 | 7 | 5 | ------ |  |
| 23 | 30.5 | 21.3 | 98 | 64 | 2 | 8 | 2.5 | Ω ≡ a. ⊤ ● p. |
| 24 | 29.6 | 20.5 | 98 | 66 | 7 | 9 | ------ | ⊤° p. |
| 25 | 30 | 21 | 97 | 63 | 2 | 4 | ------ |  |
| 26 | 30.8 | 21.5 | 98 | 65 | 7 | 2 | ------ |  |
| 27 | 31.2 | 21 | 98 | 63 | 2 | 6 | ------ | Ω ≡ a. |
| 28 | 31.5 | 20.2 | 98 | 63 | 5 | 8 | ------ | ⚑ p. |
| 29 | 31 | 21.5 | 98 | 64 | 7 | 9 | 6.1 | ⚑ ●° p. |
| 30 | 29.6 | 21.2 | 98 | 68 | 2 | 6 | 19.8 | Ω a. ● p. |
| Mean | 30 | 21 | 97.8 | 66.7 | 5.1 | 7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 143.3 |  |

### SANTA CRUZ, LAGUNA.

[φ=14° 18′ N; λ=121° 25′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 34.4 | 23.6 | 93 | 84 | 9 | 9 | 14 | ● a. ●° ⊤ ↯ p. |
| 2 | 31.9 | 22.7 | 93 | 66 | 9 | 9 | ------ | ◯ a. ⊍ ⚑ p. |
| 3 | 32.6 | 22.8 | 97 | 72 | 8 | 9 | 2 | ⊤ a. p. ◌° p ⊍ ↯ |
| 4 | 34.2 | 22.5 | 97 | 59 | 4 | 5 | ------ | Ω ≡ a. Φ ↯ p. |
| 5 | 33.2 | 23 | 97 | 64 | 4 | 8 | 5.3 | Ω d a. ◯ ↯ ●° p. |
| 6 | 32.6 | 23.1 | 95 | 62 | 8 | 7 | 2.2 | d a. p. ↯ p. |
| 7 | 32.3 | 23.1 | 92 | 72 | 9 | 8 | ------ | ● ◌² a. ⚑ ⊍ p. |
| 8 | 31.9 | 23.1 | 93 | 71 | 8 | 5 | .3 | Ω ⊤ a. p Φ ↯ p. |
| 9 | 33.1 | 23.8 | 97 | 60 | 9 | 4 | 1.9 | p ⊤ a. ⚑ d p. |
| 10 | 33.3 | 23.5 | 93 | 64 | 7 | 6 | ------ | d p ⊤ a. ◌° ↯ p. |
| 11 | 33.2 | 23.5 | 96 | 70 | 6 | 9 | 2.5 | p ⊤ d a. ↯ Φ p. |
| 12 | ------ | 22.2 | 98 | 60 | 9 | 8 | 1.5 | ● a. ⊤ ↯ p. |
| 13 | 33.8 | 23 | 95 | 81 | 9 | 9 | 18.1 | ◌² a. ● a. p. ↯ p. |
| 14 | 32.5 | 22.2 | 98 | 69 | 7 | 8 | ------ | ≡ d a. ↯ p. |
| 15 | 31.8 | 21.3 | 97 | 63 | 8 | 8 | 3.2 | Ω² ●° a. ↯ p. |
| 16 | 33.3 | 24 | 92 | 71 | 9 | 8 | 2 | ● ↙° a. ⚑ d p. |
| 17 | 30.7? | 23.9 | 94 | 69 | 9 | 8 | 3.1 | ↙° a. ●° a. p. ↯ p. |
| 18 | 32 | 22.7 | 93 | 75 | 9 | 9 | 1.8 | d a. p. p ↯ p. |
| 19 | 31.8 | 23.1 | 97 | 92 | 9 | 10 | 31.2 | d a. ●² p. |
| 20 | 30.8 | 22.6 | 98 | 68 | 10 | 9 | ------ | d a. ↯ p. |
| 21 | 31.2 | 22.7 | 97 | 66 | 10 | 9 | ------ | Ω ◌ a. |
| 22 | 33.2 | 21.1 | 97 | 58 | 2 | 7 | ------ | Ω² ≡ a. |
| 23 | 33.9 | 21.9 | 96 | 58 | 1 | 4 | ------ | Ω² ∞ a. ⊤ ↯ p. |
| 24 | 33.5 | 23 | 97 | 64 | 7 | 9 | 11.2 | Ω a. ⊤ ◌² ↯ ● p. |
| 25 | 33.8 | 22.9 | 94 | 66 | 6 | 7 | ------ | ◯° a. |
| 26 | 33.1 | 22.7 | 96 | 80 | 9 | 9 | 8.4 | Ω p a. ● ◯ ↯ p. |
| 27 | 31.9? | 23.7 | 96 | 63 | 7 | 8 | 2.7 | Ω² ≡° a. d ↯ ● p. |
| 28 | 33.4 | 22.9 | 97 | 79 | 9 | 9 | 4.3 | ● ↯ p. |
| 29 | 32.8 | 22.7 | 98 | 59 | 9 | 7 | 21.8 | ≡ ◯² a. ●² ⚑ p. |
| 30 | 34 | 21.9 | 97 | 78 | 9 | 10 | 31.7 | ◯° a. ●² ⚑ p. |
| Mean | 32.8 | 22.8 | 95.7 | 68.8 | 7.6 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 167.4 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.4 | 22.7 | 87 | 73 | 7 | 10 | 6.6 | ● p. |
| 2 | 31.7 | 23.5 | 91 | 63 | 8 | 8 | ------ | Ω° a.. |
| 3 | 33.6 | 23 | 81 | 67 | 5 | 8 | .3 | Ω° a. ⛈ ●° p. |
| 4 | 34 | 22.3 | 87 | 55 | 4 | 6 | ------ | Ω² a. |
| 5 | 32.1 | 23.4 | 85 | 66 | 4 | 8 | ------ | Ω° a. ⚡ p. |
| 6 | 33.1 | 22.8 | 89 | 59 | 5 | 7 | ------ | Ω° a. |
| 7 | 33.6 | 23.2 | 89 | 54 | 7 | 6 | ------ | ⚡ ⌒ p. |
| 8 | 35.1 | 22.5 | 87 | 49 | 5 | 6 | ------ | Ω° a. |
| 9 | 34.4 | 22.7 | 88 | 65 | 7 | 8 | ------ | ⚡ p. |
| 10 | 35.9 | 22.5 | 90 | 51 | 4 | 6 | 1.3 | Ω° a. ●° ⚡ p. |
| 11 | 33.6 | 23 | 90 | 71 | 4 | 9 | ------ | ●° p. |
| 12 | 32.1 | 22.7 | 93 | 86 | 5 | 7 | 8.2 | Ω° ● ⛈² a. |
| 13 | 32.1 | 22.7 | 86 | 64 | 7 | 8 | ------ | |
| 14 | 30.9 | 22.6 | 98 | 69 | 4 | 7 | 3.8 | Ω² ⌒ a. ● p. |
| 15 | 31.6 | 22.7 | 97 | 64 | 4 | 5 | 20.6 | Ω² a. |
| 16 | 29.1 | 22.2 | 97 | 74 | 10 | 8 | 31.3 | ● a. ●² p. |
| 17 | 30.7 | 22.2 | 97 | 73 | 10 | 7 | 10.9 | ● a. ●° a. p. |
| 18 | 30.6 | 22.7 | 97 | 72 | 7 | 9 | 9.9 | ● p. |
| 19 | 29.9 | 22.7 | 97 | 90 | 7 | 10 | 3.3 | ●° a. p. |
| 20 | 30.6 | 22.8 | 93 | 80 | 10 | 8 | ------ | |
| 21 | 31.1 | 22.2 | 93 | 66 | 4 | 9 | ------ | |
| 22 | 33.8 | 22.9 | 96 | 52 | 4 | 3 | ------ | Ω° a. |
| 23 | 32.1 | 22.5 | 92 | 56 | 2 | 3 | ------ | Ω² a. |
| 24 | 32.8 | 23.1 | 97 | 60 | 4 | 7 | ------ | Ω² a. |
| 25 | 30.8 | 22.7 | 98 | 64 | 4 | 5 | ------ | Ω² a. |
| 26 | 32.4 | 23 | 96 | 73 | 7 | 9 | ------ | Ω° a. |
| 27 | 31.4 | 23 | 94 | 65 | 5 | 5 | 1 | Ω² a. ●° ⛈ p. |
| 28 | 31.6 | 23.4 | 98 | 67 | 6 | 7 | ------ | Ω° a. ⚡ p. |
| 29 | 32.6 | 22.2 | 93 | 70 | 5 | 8 | 3 | Ω² a. ●° p. |
| 30 | 31.9 | 22.2 | 89 | 71 | 6 | 9 | 68.6 | ●² p. |
| Mean | 32.3 | 22.7 | 92.2 | 66.3 | 5.7 | 7.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 168.8 | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 34.1 | 24.5 | 86 | 68 | 10 | 10 | 1.5 | ⛈° p. |
| 2 | 32 | 23.5 | 90 | 65 | 10 | 10 | ------ | ◯° ψ ⚡ p. |
| 3 | 31.4 | 22.6 | 93 | 72 | 10 | 10 | ------ | ⊤°◯°a. ⊤°ψ²⚡p |
| 4 | 33.4 | 21.6 | 96 | 59 | 7 | 7 | 12.8 | Ω a. ◯° ⛈ ● p. |
| 5 | 33.4 | 22.5 | 97 | 79 | 10 | 10 | 6.4 | ⛈ ● p. |
| 6 | 34.6 | 22.1 | 91 | 55 | 9 | 7 | 5.8 | ⛈ ● p. |
| 7 | 33.3 | 22.8 | 95 | 66 | 10 | 5 | 4.4 | ◯ a. ⛈ ● p. |
| 8 | 32.5 | 22.7 | 94 | 63 | 10 | 10 | 12.7 | ◯ a. ⊤ ⚡ ● p. |
| 9 | 32.6 | 23 | 96 | 65 | 10 | 10 | ------ | ◯²a. ⊤°d°ψ ⚡ p. |
| 10 | 33 | 23.5 | 95 | 65 | 10 | 7 | 3.6 | ⛈² ● p. |
| 11 | 33.4 | 23.2 | 97 | 68 | 3 | 8 | 11 | ⛈² ● ψ p. |
| 12 | 33 | 22.9 | 93 | 60 | 10 | 10 | ------ | ◯ a. p. d ⊤² ψ° ⚡ |
| 13 | 32.5 | 22.9 | 90 | 70 | 10 | 10 | 1.8 | ◯° a. ⌒ ●° ⛈ p. |
| 14 | 29.4 | 24 | 93 | 92 | 10 | 10 | 45.7 | ●² a. ●° ⚡ p. |
| 15 | 31.4 | 22.9 | 94 | 71 | 10 | 10 | 54.1 | ● a. p. ⊤ ⚡ p. |
| 16 | 28.2 | 23.6 | 97 | 87 | 10 | 10 | 41.7 | ⊤ ● a. ⛈² ● p. |
| 17 | 29.2 | 23 | 98 | 91 | 10 | 10 | 35.1 | ● ⊤ a. ●° p. |
| 18 | 28.5 | 23.4 | 95 | 89 | 10 | 10 | 42.1 | d ● a. ●² p. |
| 19 | 28.6 | 23 | 95 | 95 | 10 | 10 | 127.7 | ● a. ●² p. |
| 20 | 28.2 | 23 | 92 | 77 | 10 | 10 | 106.3 | d a. ●² a. p. ⊤ p. |
| 21 | 30 | 22.7 | 94 | 84 | 10 | 10 | 1.5 | d a. ●° p. |
| 22 | 31.8 | 23.3 | 91 | 68 | 10 | 4 | ------ | d a. ⊤ ⚡ p. |
| 23 | 31.6 | 22.2 | 96 | 71 | 1 | 7 | ------ | ⊤° ⚡ p. |
| 24 | 31.9 | 22.5 | 97 | 69 | 6 | 10 | ------ | Ω ≡° a. ⊤ d ⚡ p. |
| 25 | 31.8 | 23 | 95 | 70 | 10 | 5 | ------ | ◯ p. |
| 26 | 31.5 | 22.3 | 95 | 72 | 8 | 10 | ------ | ≡° a. ⊤° d ⚡ p. |
| 27 | 29.5 | 23.3 | 92 | 92 | 10 | 10 | 49.1 | ●° a. ●² p. |
| 28 | 31.7 | 22.4 | 93 | 78 | 10 | 9 | .5 | d ⚡ p. |
| 29 | 30.9 | 23 | 95 | 81 | 8 | 10 | .2 | d ⌒ p. |
| 30 | 31 | 22.4 | 96 | 74 | 10 | 10 | 6.1 | d a. ●° p. |
| Mean | 31.5 | 22.9 | 94 | 73.9 | 9.1 | 9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 570.1 | |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.2 | 23.4 | 93 | 50 | 4 | 7 | ------ | Ω a. |
| 2 | 33.5 | 23.5 | 95 | 66 | 2 | 3 | ------ | Ω a. |
| 3 | 34 | 22.5 | 96 | 59 | 3 | 7 | ------ | Ω a. |
| 4 | 36.5 | 22.6 | 95 | 38 | 2 | 7 | ------ | Ω a. |
| 5 | 35 | 23.2 | 94 | 52 | 3 | 6 | ------ | Ω a. |
| 6 | 36.2 | 22.4 | 96 | 49 | 3 | 7 | ------ | Ω a. |
| 7 | 33.5 | 23.8 | 90 | 59 | 7 | 8 | ------ | Ω a. |
| 8 | 36.4 | 22.8 | 94 | 47 | 4 | 9 | ------ | Ω a. |
| 9 | 37 | 23.9 | 94 | 39 | 4 | 8 | 1 | Ω a. ⊤ ⚡ ● p. |
| 10 | 37.8 | 23.6 | 95 | 48 | 3 | 2 | ------ | Ω a. |
| 11 | 37 | 23.6 | 93 | 48 | 3 | 3 | ------ | Ω a. |
| 12 | 37.5 | 22.7 | 94 | 51 | 4 | 3 | ------ | Ω a. |
| 13 | 37.3 | 22.8 | 96 | 49 | 7 | 3 | ------ | Ω a. |
| 14 | 33 | 22.6 | 97 | 64 | 10 | 9 | 5.1 | Ω a. ● p. |
| 15 | 34.7 | 22.5 | 96 | 63 | 2 | 9 | 3.3 | Ω ≡° a. ●° p. |
| 16 | 32.5 | 22.3 | 94 | 51 | 10 | 10 | 6.1 | Ω ● a. d p. |
| 17 | 32.3 | 23.5 | 97 | 81 | 10 | 10 | 13.2 | ● a. p. |
| 18 | 32.5 | 23.6 | 97 | 68 | 8 | 8 | 5.1 | Ω a. ● p. |
| 19 | 28 | 23.4 | 95 | 86 | 10 | 10 | 25.7 | ● d a. p. |
| 20 | 28.6 | 22.8 | 96 | 81 | 10 | 10 | 3.5 | ● d a. p. ⛈ p. |
| 21 | 30.5 | 23.1 | 92 | 71 | 10 | 9 | ------ | |
| 22 | 34.2 | 21.8 | 96 | 59 | 3 | 7 | ------ | Ω a. |
| 23 | 37 | 21.8 | 97 | 52 | 2 | 8 | ------ | Ω a. |
| 24 | 36.9 | 23 | 95 | 49 | 3 | 9 | ------ | Ω ≡° a. |
| 25 | 37.4 | 23.8 | 94 | 61 | 4 | 9 | ------ | Ω a. |
| 26 | 34.5 | 22 | 95 | 53 | 3 | 8 | 8.4 | Ω a. ● ⛈ p. |
| 27 | 33.2 | 22.4 | 97 | 55 | 9 | 10 | 11.4 | Ω a. ● p. |
| 28 | 34.6 | 21.8 | 97 | 60 | 8 | 9 | 13 | Ω ≡ a. ● ⊤ p. |
| 29 | 35.2 | 22.5 | 96 | 55 | 4 | 9 | 15.5 | Ω ≡° a. ● p. |
| 30 | 35 | 22.7 | 97 | 57 | 10 | 10 | .5 | Ω ≡ a. d p. |
| Mean | 34.5 | 22.9 | 95.1 | 57.4 | 5.5 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 111.8 | |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.5 | 24.3 | 96 | 92 | 10 | 10 | 5.1 | ● a. p. ⊤ p. |
| 2 | 31.4 | 23.2 | 97 | 77 | 10 | 9 | ------ | Ω ≡ a. |
| 3 | 32.1 | 22.6 | 96 | 71 | 9 | 10 | .5 | Ω d a. ψ d² p. |
| 4 | 32.5 | 23.1 | 95 | 68 | 8 | 1 | 1 | Ω ≡° a. ϖ p. |
| 5 | 32.1 | 23.8 | 92 | 73 | 9 | 9 | 16.3 | ● a. p. ⚡ p. |
| 6 | 32.3 | 23.8 | 95 | 60 | 9 | 9 | 17 | Ω a. p ● p. |
| 7 | 32.3 | 22.5 | 95 | 69 | 10 | 9 | 10.2 | ● ⛈ p. |
| 8 | 32.3 | 23.2 | 93 | 72 | 10 | 2 | 8.9 | Ω° a. ● ⛈ p. |
| 9 | 32 | 24.4 | 96 | 74 | 10 | 2 | 35.3 | ● a. ●² ⛈ p. |
| 10 | 32.5 | 24.2 | 96 | 71 | 9 | 2 | 2 | Ω a. ψ d ⛈ p. |
| 11 | 32.5 | 24.3 | 96 | 75 | 9 | 10 | .2 | Ω ≡° a. ψ ⚡ d p. |
| 12 | 32.3 | 23.5 | 95 | 66 | 6 | 4 | .5 | Ω ≡° a. ϖ d p. |
| 13 | 32.9 | 23.5 | 93 | 66 | 10 | 5 | ------ | Ω a. ψ ⚡ p. |
| 14 | 35.3 | 23.8 | 92 | 57 | 9 | 2 | ------ | |
| 15 | 35.8 | 25.4 | 82 | 56 | 9 | 1 | ------ | |
| 16 | 34.1 | 26.4 | 80 | 61 | 10 | 9 | ------ | ⚡ p. |
| 17 | 33.7 | 25.7 | 81 | 59 | 10 | 7 | ------ | |
| 18 | 34.7 | 25.4 | 84 | 73 | 10 | 9 | 2.5 | ● ⚡ p. |
| 19 | 29.7 | 23.5 | 92 | 83 | 8 | 10 | 12.2 | d a. p. ● p. |
| 20 | 31.2 | 23.3 | 96 | 66 | 10 | 10 | .3 | d a. |
| 21 | 32 | 23.2 | 94 | 72 | 9 | 10 | ------ | |
| 22 | 34.1 | 22.1 | 94 | 60 | 10 | 1 | ------ | Ω° a. |
| 23 | 34.5 | 22.4 | 92 | 66 | 0 | 1 | ------ | ⚡ p. |
| 24 | 33.8 | 23.9 | 94 | 67 | 10 | 9 | ------ | ⚡ p. |
| 25 | 35.8 | 24.4 | 85 | 52 | 10 | 6 | ------ | |
| 26 | 35.3 | 25.2 | 79 | 53 | 10 | 10 | ------ | |
| 27 | 36.3 | 26.4 | 80 | 52 | 10 | 3 | ------ | ⚡ p. |
| 28 | 35.8 | 25.3 | 80 | 60 | 10 | 8 | 3 | ● ⚡ p. |
| 29 | 33.3 | 22.3 | 90 | 66 | 10 | 4 | .5 | Ω a. ⊤ d p. |
| 30 | 34.2 | 23 | 92 | 58 | 10 | 9 | 1.8 | Ω a. d p. |
| Mean | 33.2 | 23.9 | 90.7 | 66.5 | 9.1 | 6.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 117.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.9 | 23.1 | 92 | 58 | 10 | 8 | ------ | ⛈ p. |
| 2 | 34.7 | 23.7 | 93 | 54 | 1 | 3 | ------ | ⊤ p. |
| 3 | 34 | 22.7 | 94 | 55 | 3 | 6 | 1.8 | ●° ⊤° p. |
| 4 | 32.9 | 23.9 | 92 | 63 | 5 | 4 | 2 | ●° ϟ p. |
| 5 | 32.5 | 23.2 | 94 | 64 | 7 | 7 | ------ | |
| 6 | 33.5 | 24 | 92 | 59 | 2 | 3 | ------ | |
| 7 | 34 | 23.8 | 91 | 56 | 5 | 3 | ------ | ⌣° p. |
| 8 | 34.3 | 24.2 | 88 | 56 | 3 | 6 | ------ | ⊤° p. |
| 9 | 34.6 | 24.9 | 89 | 50 | 1 | 5 | ------ | ⊤ p. |
| 10 | 31.7 | 23.4 | 92 | 73 | 3 | 7 | .3 | ●° d° p. |
| 11 | 31.4 | 24.4 | 92 | 76 | 2 | 7 | 6.6 | d ⛈$^2$ ● p. |
| 12 | 33.4 | 23.4 | 93 | 60 | 2 | 3 | .8 | d p. |
| 13 | 33.2 | 24.7 | 94 | 61 | 2 | 3 | 51.6 | ⛈° ●$^2$ p. |
| 14 | 33 | 23.6 | 94 | 69 | 10 | 7 | 3 | ● p. |
| 15 | 33.1 | 24.5 | 91 | 62 | 3 | 5 | .8 | d p p. |
| 16 | 26.4 | 24.8 | 91 | 94 | 8 | 10 | 29.4 | ● a. p. |
| 17 | 28 | 23.5 | 89 | 80 | 10 | 9 | 52.1 | ● a. ●$^2$ p. |
| 18 | 30.8 | 23.8 | 94 | 76 | 4 | 7 | .8 | ●° p. |
| 19 | 30.3 | 23.9 | 91 | 75 | 7 | 10 | 17.8 | ● p. |
| 20 | 30.4 | 24.1 | 88 | 82 | 10 | 10 | 4.1 | ● a. d p. |
| 21 | 31.3 | 24 | 88 | 71 | 10 | 8 | 5.6 | ● p. |
| 22 | 32.5 | 22.7 | 91 | 64 | 2 | 2 | ------ | ⛈° p. |
| 23 | 31.8 | 23.6 | 97 | 71 | 6 | 3 | ------ | Ω a. |
| 24 | 32.2 | 24.2 | 97 | 67 | 4 | 6 | 51.6 | Ω a. ●$^2$ p. |
| 25 | 32 | 23.7 | 95 | 66 | 10 | 3 | ------ | |
| 26 | 32.1 | 24.7 | 87 | 67 | 10 | 8 | ------ | d° p. |
| 27 | 31.3 | 24.9 | 83 | 71 | 9 | 7 | ------ | |
| 28 | 32.6 | 24 | 94 | 66 | 10 | 4 | 9.1 | Ω a. ● p. |
| 29 | 30.8 | 22.9 | 97 | 73 | 3 | 4 | 38.1 | ●$^2$ p. |
| 30 | 31.1 | 22 | 97 | 72 | 4 | 5 | 21.6 | ● p. |
| Mean | 32.1 | 23.8 | 92 | 67 | 5.5 | 5.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 297.1 | |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.8 | 24 | 98 | 71 | 10 | 10 | 0.3 | d$^2$⊤°a.◯°a.p.ϟ° |
| 2 | 35.1 | 23.2 | 97 | 54 | 6 | 4 | ------ | ⌒$^2$d°a.⌣°ϟ°p. |
| 3 | 34.4 | 22.4 | 95 | 52 | 3 | 6 | ------ | Ω$^2$◯$^2$a.ϟ°⌣°p. |
| 4 | 35.1 | 23 | 97 | 53 | 4 | 7 | ------ | Ω$^2$◯°a.⛈°⌣°p. |
| 5 | 33 | 22.8 | 97 | 64 | 5 | 8 | 4.6 | ◯$^2$⊤°a.d$^2$⛈°p. |
| 6 | 33.7 | 23.5 | 97 | 60 | 5 | 5 | ------ | Ω$^2$ a. |
| 7 | 34.5 | 22.1 | 96 | 54 | 7 | 6 | 4.3 | ◯°a.p.⛈°d$^2$p. |
| 8 | 35.4 | 23.2 | 97 | 51 | 3 | 3 | .3 | ≡°a.d$^2$⌒°ϟ°p. |
| 9 | 35 | 23.2 | 96 | 55 | 5 | 4 | ------ | Ω$^2$a.d°⊤°ϟ°p. |
| 10 | 34.8 | 23 | 96 | 58 | 2 | 6 | ------ | Ω$^2$a.d°⊕$^2$⌒°p. |
| 11 | 32.2 | 23.2 | 96 | 69 | 4 | 9 | ------ | ◯$^2$a.⊤°a.p.⌒◯° |
| 12 | 34.1 | 22.3 | 96 | 62 | 3 | 6 | ------ | Ω$^2$ a. ϟ° p. |
| 13 | 35.6 | 21.9 | 96 | 50 | 3 | 2 | ------ | Ω$^2$ a. ϟ°p. |
| 14 | 35.9 | 23.2 | 95 | 51 | 3 | 2 | ------ | Ω$^2$◯°a.⛈°d° p. |
| 15 | 36.4 | 23.6 | 94 | 49 | 4 | 4 | 20.6 | ⛈° ●$^2$ p. |
| 16 | 36 | 22.7 | 97 | 52 | 9 | 8 | 12.2 | ◯$^2$a.⛈$^2$●$^2$d°p. |
| 17 | 32 | 23.7 | 97 | 67 | 10 | 9 | ------ | ≡ ⊕$^2$ a. |
| 18 | 36.1 | 23.1 | 96 | 52 | 4 | 8 | ------ | C° a. p. ⛈° p. |
| 19 | 33.2 | 23.6 | 95 | 66 | 8 | 10 | ------ | Ω$^2$ C° a. ⌒° p. |
| 20 | 32.1 | 23.7 | 96 | 57 | 10 | 10 | ------ | d° ⊕° a. |
| 21 | 33.8 | 24.2 | 95 | 61 | 7 | 10 | ------ | ⊕° a. p. |
| 22 | 36.4 | 21.5 | 95 | 49 | 2 | 2 | ------ | Ω$^2$ a. ϟ° p. |
| 23 | 36 | 24 | 97 | 52 | 4 | 4 | ------ | ◯° a. ⌒° ⛈ °p. |
| 24 | 36.1 | 23.7 | 95 | 51 | 7 | 9 | ------ | Ω°a.◯°a.p.ϟ°p. |
| 25 | 36.8 | 23.8 | 93 | 50 | 3 | 8 | ------ | Ω°◯°a.⛈°d°p. |
| 26 | 34.5 | 22.1 | 95 | 52 | 10 | 10 | ------ | ◯$^2$a.⊤°a.p.⊕$^2$p. |
| 27 | 36.8 | 24.1 | 93 | 47 | 9 | 4 | 1.5 | ⊕$^2$ a. ⛈° d$^2$ p. |
| 28 | 35.2 | 22.6 | 96 | 52 | 10 | 8 | .5 | ⛈° d$^2$ p. |
| 29 | 35.1 | 22 | 98 | 53 | 6 | 8 | ------ | ⊤° a. p. d° p. |
| 30 | 34.4 | 23.4 | 97 | 53 | 10 | 9 | 13 | C° a. p. ⊤° d$^2$ p. |
| Mean | 34.7 | 23.1 | 95.9 | 55.6 | 5.9 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 57.3 | |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.9 | 24.9 | 84 | 69 | 9 | 8 | ------ | Ω a. ϟ p. |
| 2 | 33.2 | 25.5 | 85 | 61 | 1 | 3 | 50.8 | Ω a.⌒ ●$^2$ ⛈° p. |
| 3 | 31.7 | 25.8 | 88 | 69 | 4 | 3 | ------ | Ω a. ⊤° ϟ p. |
| 4 | 31.8 | 25.2 | 84 | 68 | 6 | 5 | 4.1 | Ω a. d ⊤° ● ϟ p. |
| 5 | 32.2 | 25 | 88 | 69 | 6 | 4 | 11.4 | ⊤° ● ϟ p. |
| 6 | 31.7 | 25.5 | 88 | 72 | 8 | 7 | ------ | d a. ϟ p. |
| 7 | 32.4 | 26.2 | 87 | 65 | 9 | 4 | ------ | Ω a. ϟ p. |
| 8 | 32.5 | 26.6 | 84 | 70 | 8 | 5 | 2.8 | Ω a. ⊤° ● ⌒° p. |
| 9 | 32.7 | 25.9 | 88 | 75 | 2 | 4 | 1.8 | ⛈$^2$ ● p. |
| 10 | 32.7 | 25.9 | 88 | 72 | 2 | 6 | 9.4 | ● ⊤° ϟ p. |
| 11 | 32.6 | 25.5 | 91 | 69 | 2 | 4 | 9.9 | ⌒° ● ⛈$^2$ p. |
| 12 | 32.3 | 25.5 | 91 | 72 | 3 | 1 | ------ | ⊤° d ϟ p. |
| 13 | 31.9 | 25.5 | 87 | 70 | 8 | 2 | 3.5 | ⌒° p p. |
| 14 | 32.2 | 25.4 | 89 | 70 | 8 | 7 | 4.1 | ● a. p. ⊤ ⌒° p. |
| 15 | 31.9 | 26.5 | 88 | 75 | 8 | 4 | 3.8 | |
| 16 | 30.3 | 26.7 | 88 | 81 | 10 | 10 | 6.4 | ⌒°a ●a.p.⊤°p. |
| 17 | 29.3 | 25.5 | 91 | 78 | 9 | 10 | 1.3 | ⊤° ● a. |
| 18 | 31.6 | 25.2 | 88 | 70 | 8 | 9 | 2 | ⊤° ● p. |
| 19 | 32.2 | 25.5 | 89 | 71 | 10 | 9 | ------ | d p. |
| 20 | 32.5 | 25.5 | 84 | 82 | 10 | 10 | 2 | p p. |
| 21 | 31.1 | 25.5 | 80 | 68 | 10 | 10 | ------ | ⌒° a. d p. |
| 22 | 32.7 | 24.7 | 87 | 63 | 7 | 4 | 18.5 | ● ⛈ p. |
| 23 | 30.7 | 24.5 | 92 | 76 | 3 | 2 | ------ | ⊤° p. |
| 24 | 31.7 | 26.5 | 92 | 76 | 7 | 8 | 4.6 | ϟ p. |
| 25 | 31.2 | 26.1 | 90 | 72 | 9 | 4 | ------ | ● a. |
| 26 | 31.3 | 25.2 | 88 | 73 | 10 | 10 | ------ | Ω a. |
| 27 | 32.2 | 25.5 | 90 | 73 | 10 | 4 | ------ | Ω a. |
| 28 | 31.8 | 25 | 88 | 75 | 8 | 6 | .8 | p p. |
| 29 | 31.4 | 24.8 | 88 | 74 | 4 | 8 | 28.4 | Ω a. ● p. |
| 30 | 30.4 | 24.4 | 92 | 82 | 4 | 10 | 28.2 | ● ⛈° p. |
| Mean | 31.8 | 25.5 | 87.9 | 72 | 6.8 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 193.8 | |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 35.2 | 24.7 | 90 | 62 | 2 | 3 | 2.3 | ● ⛈ p. |
| 2 | 34.9 | 24 | 93 | 59 | 0 | 4 | 4.8 | Ω a. ● ⛈ p. |
| 3 | 33.3 | 24.6 | 93 | 67 | 0 | 6 | 3 | ● ⛈ p. |
| 4 | 34.1 | 23.6 | 95 | 58 | 0 | 7 | 2.3 | Ω a. ⛈ ●° p. |
| 5 | 35.3 | 23.7 | 94 | 53 | 0 | 3 | ------ | |
| 6 | 38.2 | 25 | 93 | 43 | 1 | 3 | ------ | |
| 7 | 35.9 | 24.6 | 88 | 54 | 3 | 5 | ------ | |
| 8 | 34.3 | 25.6 | 91 | 60 | 0 | 2 | ------ | ϟ p. |
| 9 | 34.4 | 25.5 | 91 | 63 | 0 | 4 | ------ | ⛈ p. |
| 10 | 35.3 | 25 | 89 | 65 | 0 | 4 | ------ | ⊤ ϟ p. |
| 11 | 36.4 | 25.5 | 93 | 61 | 0 | 5 | 1.8 | ●° ⛈ p. |
| 12 | 35.4 | 25.1 | 96 | 61 | 0 | 5 | ------ | Ω$^2$ a. ⛈ d° p. |
| 13 | 34.5 | 24.8 | 93 | 63 | 0 | 4 | 7.1 | Ω a. ● ⛈ p. |
| 14 | 34.2 | 24.7 | 93 | 62 | 3 | 5 | ------ | ϟ p. |
| 15 | 33.6 | 25.4 | 90 | 60 | 10 | 8 | 19.3 | d° ●° a. |
| 16 | [illegible] | 24.9 | 97 | 93 | 10 | 10 | 20.8 | ● a. p. d p. |
| 17 | 32.4 | 24.6 | 92 | 78 | 10 | 10 | ------ | d° p. |
| 18 | 33.8 | 24.3 | 91 | 61 | 8 | 7 | 3.3 | ● p. |
| 19 | 34.3 | 24.6 | 94 | 63 | 7 | 8 | 15.7 | d° ● p. |
| 20 | 33.8 | 23.9 | 94 | 66 | 10 | 10 | ------ | ⌒$^2$ p. |
| 21 | 33.9 | 25.5 | 78 | 56 | 10 | 8 | ------ | d° a. p. |
| 22 | 34.3 | 25.1 | 78 | 56 | 3 | 3 | ------ | |
| 23 | 33.4 | 24.3 | 88 | 64 | 0 | 3 | ------ | |
| 24 | 33.5 | 25.2 | 92 | 62 | 0 | 3 | 11.7 | ● p. |
| 25 | 33.6 | 24.8 | 91 | 59 | 2 | 4 | ------ | |
| 26 | 32.9 | 24.6 | 85 | 63 | 9 | 7 | ------ | |
| 27 | 33.8 | 24.7 | 84 | 61 | 3 | 7 | ------ | ⌒ p. |
| 28 | 34 | 24.3 | 84 | 61 | 1 | 6 | 1 | ●° p. |
| 29 | 32.8 | 23.8 | 92 | 64 | 0 | 9 | 1.5 | ●° p. |
| 30 | 32.3 | 24.2 | 94 | 72 | 8 | 10 | .5 | d p. |
| Mean | 34.1 | 24.7 | 90.5 | 62.3 | 3.3 | 5.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 95.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SANTO DOMINGO.

[$\phi = 20° 28' N$; $\lambda = 121° 59' E$]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.7 | 24.7 | 88 | 76 | 2 | 3 | 3.8 | ● p. |
| 2 | 31.9 | 26.4 | 89 | 81 | 4 | 3 | 1.5 | ◯° ⌓ ↯° p. |
| 3 | 31.5 | 25.8 | 92 | 76 | 0 | 3 | ------ | ● v a. ⌓ p. |
| 4 | 32.5 | 25.3 | 86 | 70 | 3 | 4 | ------ | v a. ⌓ p. |
| 5 | 31.8 | 27.2 | 82 | 74 | 1 | 3 | ------ | ⌓ p. |
| 6 | 31.6 | 26.3 | 77 | 69 | 3 | 3 | .5 |  |
| 7 | 31.9 | 25.7 | 86 | 75 | 4 | 6 | 1 | ●° d° a. ⌓ p. |
| 8 | 31.9 | 26.7 | 88 | 76 | 4 | 3 | .7 | ● a. ⌓ p. |
| 9 | 32.3 | 26.8 | 86 | 74 | 3 | 4 | ------ | ● v a. |
| 10 | 32.3 | 27.2 | 83 | 72 | 3 | 3 | ------ |  |
| 11 | 32.1 | 27.3 | 83 | 72 | 4 | 3 | ------ |  |
| 12 | 32.3 | 26.8 | 83 | 72 | 2 | 3 | ------ | v a. |
| 13 | 32.7 | 27 | 82 | 69 | 4 | 3 | ------ | ⌓ p. |
| 14 | 33.6 | 26.5 | 93 | 72 | 5 | 4 | ------ | ⌓$^{2}$ ↯° p. |
| 15 | 33.2 | 24.8 | 82 | 77 | 4 | 4 | ------ |  |
| 16 | 32.9 | 28 | 83 | 76 | 8 | 7 | ------ | ⌓ ↯° p. |
| 17 | 31.8 | 24.7 | 93 | 73 | 5 | 6 | ------ | ↯° p. |
| 18 | 32.3 | 27.6 | 83 | 72 | 7 | 5 | ------ | d° a. ↯ p. |
| 19 | 33.2 | 27.3 | 89 | 86 | 8 | 9 | 13.2 | ● a. p. d° ↯ p. |
| 20 | 32.8 | 25.6 | 83 | 72 | 8 | 7 | 43.2 | d$^{2}$ a. ●$^{2}$ ⌈↯$^{2}$ p. |
| 21 | 32.9 | 24.7 | 85 | 74 | 8 | 5 | 13.2 | ⌈↯ p. |
| 22 | 32.8 | 23.5 | 91 | 67 | 7 | 4 | ------ | ● a. |
| 23 | 31.3 | 25.6 | 84 | 80 | 4 | 4 | ------ | ↯° p. |
| 24 | 30.5 | 27.4 | 85 | 76 | 4 | 7 | ------ |  |
| 25 | 30.6 | 27.4 | 84 | 78 | 7 | 7 | ------ | ◯° p. |
| 26 | 30.5 | 27.5 | 83 | 76 | 9 | 7 | ------ | ◯$^{2}$ p. |
| 27 | 30.9 | 27.5 | 84 | 81 | 5 | 9 | ------ | ◯$^{2}$ p. |
| 28 | 31.7 | 27.5 | 85 | 76 | 3 | 5 | ------ | d° p. |
| 29 | 32.6 | 27.1 | 86 | 76 | 7 | 6 | ------ | ψ° p. |
| 30 | 31.5 | 25.8 | 87 | 80 | 5 | 8 | 4.6 | ◯° ⌓ p. |
| Mean | 32.1 | 26.4 | 85.5 | 74.9 | 4.7 | 4.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 81.7 |  |

# SEISMOLOGICAL BULLETIN FOR JUNE, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, $23^{h}$ $41^{m}$ $30^{s}$.* **Southeastern Luzon, Samar, and northern Leyte.** Earthquake of intensity III. Its epicenter lay, no doubt, at some distance out in the Pacific Ocean, about 500 kilometers from Manila, near the northern end of the "Planet Trough" (125.5° long. E and 13.5° lat. N.). Hence, southeastern Luzon, the Catanduanes, Masbate, Samar, and northern Leyte were only within the outermost isoseismals, to wit, III and II. This slight intensity, together with the inopportune hour, explains why only a few meteorological observers—viz, those of Virac, Tacloban, and Nueva Caceres—perceived the disturbance. At the epicenter it doubtlessly developed a much greater intensity; to this conclusion point both its amplitude and duration as registered by the seismographs at Manila. The quake was likewise recorded by the instruments at Zikawei, and presumably by others in the Far East; possibly even by some in the eastern part of Europe.

3, $21^{h}$ $48^{m}$ $3^{s}$.* **Mindoro, Calamianes, Panay, and Cuyo.** Earthquake of intensity IV whose epicenter seems to have been south of Mindoro Island—that is, between this island and Cuyo—not far from the meridian 121° east and the parallel 11.5° north.

3, $21^{h}$ $51^{m}$ $12^{s}$.* **Catanduanes, Samar, and northern Leyte.** Earthquake of force III, having, it would appear, the same epicenter as the disturbance of the 2nd, though the latter had been more important both, in extent and intensity.

4, $7^{h}$ $51^{m}$. **Cuyo Island.** Oscillatory earthquake of intensity III, lasting 3 seconds. The slight disturbance constituted probably a repetition of the one which had occurred at $21^{h}$ $48^{m}$ $3^{s}$ of the 3d. Cuyo is the station nearest to the epicenter indicated for the latter.

5, $17^{h}$ $39^{m}$ $51^{s}$.* **Butuan.** (N of Mindanao). Oscillatory earthquake. Direction NNE–SSW, intensity III, duration very long, nearly one minute.

6, $17^{h}$ $12^{m}$. **Guam** (Mariana Islands). Earthquake of intensity III.

8, $2^{h}$ $48^{m}$ $36^{s}$.* **Mindoro, Calamianes, Panay, and Cuyo.** Earthquake of intensity IV, proceeding from the epicenter indicated for the one at $21^{h}$ $48^{m}$ $3^{s}$ of the 3d. It was slightly more intense than the latter and the isoseismic lines comprised a somewhat larger territory.

10, $15^{h}$ $3^{m}$. **Guam** (Mariana Islands). Earthquake of intensity IV.

13, $3^{h}$ $34^{m}$. **Eastern Leyte and Southern Samar.** Earthquake of intensity III whose epicenter lay underneath the sea, not far from the southern coast of Samar.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

14, 23<sup>h</sup> 58<sup>m</sup>. **Sarangani** (S of Mindanao). Earthquake of intensity II.

15, 22<sup>h</sup> 29<sup>m</sup> 32<sup>s</sup>.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction E–W, intensity III, duration 10 seconds. It was perceptible throughout Cagayan Province, as is shown by the note received from Tuguegarao, where it had force II. Its origin appears to have been some 500 kilometers from Manila and 140 kilometers east of Aparri, near longitude 123° E and latitude 18.5° N, as indicated by the seismograms traced by our Vicentini, Omori, and Wiechert instruments. This disturbance took place about 2 minutes after the great earthquake of Kagoshima, Japan, which latter must have occurred at approximately 22<sup>h</sup> 26<sup>m</sup> 40<sup>s</sup>. The waves of the two quakes had to arrive at Manila with a difference in time of slightly more than one minute. Hence, the beginnings of our seismograms correspond to the earthquake whose center lay east of the northern end of Luzon. Soon, however, followed the waves caused by the severe quake of Kagoshima, though it is very difficult to distinguish the exact moment when they began to influence the instruments. For this reason the times for the beginning and end of the first preliminary movements (22<sup>h</sup> 29<sup>m</sup> 32<sup>s</sup> and 22<sup>h</sup> 30<sup>m</sup> 31<sup>s</sup>) which are given in "Records of the Microseismographs" correspond to the disturbance caused by the earthquake northeast of Luzon and not to the one due to the Kagoshima earthquake. The approximate time of the beginning of the latter (22<sup>h</sup> 30<sup>m</sup> 51<sup>s</sup>) has been taken from the seismograms which at that moment show a change in the period and amplitude of oscillation. This change we believe to be owing to the arrival of the seismic waves proceeding from the Kagoshima center.

19, 2<sup>h</sup> 52<sup>m</sup>. **Sarangani** (S of Mindanao). Earthquake of intensity II, with a repetition at 21<sup>h</sup> 30<sup>m</sup>.

19, 20<sup>h</sup> 2<sup>m</sup>. **Santo Domingo** (Batanes Islands). Trepidatory earthquake of intensity II, lasting 3 seconds. Repeated at 21<sup>h</sup> 23<sup>m</sup> with oscillatory movements in the direction WSW–ENE and intensity III; duration 5 seconds.

23, 3<sup>h</sup> 27<sup>m</sup> 23<sup>s</sup>.* **Southern Luzon and Mindoro.** Earthquake of intensity IV, which was felt in northeastern Mindoro and throughout the south of Luzon comprising the Provinces of Batangas, Laguna, and Tayabas; it must have been likewise perceptible on Marinduque Island. Its epicenter was apparently east of the Verde Island passage, which separates Mindoro from Luzon.

27, 8<sup>h</sup> 6<sup>m</sup> **Butuan** (N of Mindanao). Oscillatory and trepidatory earthquake. Direction ESE–WNW, intensity III, duration 10 seconds.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.$^h$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 112 | 2 | $I_d$ | V. | ---------- | ---------- | 21 24 35 | 21 24 37 | 0.05 | 2.4 | 21 27 | Vertical Component 0.01 mm. |
| 113 | 2 | I | H. WSW | 12 39 25 | ---------- | ---------- | ---------- | ------ | ------ | 12 56 | |
| 114 | 2–3 | $II_v$ | V. | 23 41 30 | ---------- | 23 42 36 | 23 42 47 | .37 | 2.4 | 0 06 | V. C. 0.07 mm. Earthquake, III south-eastern Luzon, Samar and N of Leyte. |
| | | | H. WSW | 23 41 30 | ---------- | 23 42 45 | 23 44 01 | .82 | 8.1 | 0 45 | |
| | | | W. N. | 23 41 24 | ---------- | 23 42 34 | 23 43 43 | .22 | 6.8 | 0 10 | |
| 115 | 3 | $II_v$ | V. | 21 48 04 | ---------- | 21 48 40 | 21 48 53 | .73 | 2.4 | ---------- | V. C. 0.8 mm. Eqke., IV., origin S of Mindoro. |
| | | | W. N | 21 48 03 | ---------- | 21 48 37 | 21 48 46 | .07 | 2.8 | ---------- | |
| | | | W. E | 21 48 03 | ---------- | 21 48 34 | 21 48 44 | .09 | 3.6 | ---------- | |
| 116 | 3 | $I_v$ | V. | 21 51 12 | ---------- | 21 52 26 | 21 53 00 | .12 | 2.4 | 22 02 | V. C. 0.01 mm. Eqke., III, origin NE of Samar. |
| 117 | 4 | I | H. WSW | 4 31 20 | ---------- | ---------- | ---------- | ------ | ------ | 5 08 | |
| 118 | 5 | $I_v$ | V. | 17 39 55 | ---------- | 17 41 34 | 17 42 46 | .04 | 2.4 | 17 56 | Eqke., III at Butuan (N of Mindanao). |
| | | | H. WSW | 17 39 55 | ---------- | 17 41 40 | 17 42 52 | .07 | 6.6 | 18 01 | |
| | | | W. E | 17 39 55 | ---------- | 17 41 43 | ---------- | ------ | ------ | 17 51 | |
| 119 | 5 | $I_d$ | V. | ---------- | ---------- | 19 19 07 | 19 19 12 | .04 | 2.4 | 19 21 | |
| 120 | 7 | $III_u$ | V. | 19 24 00 | 19 38 34 | 19 53 00 | 20 29 27 | .03 | 19.2 | 21 40 | Mexico. |
| | | | H. NNW | 19 24 00 | 19 37 50 | 19 51 21 | 20 29 14 | .08 | 18.6 | 21 29 | |
| | | | H. WSW | 19 24 00 | 19 38 00 | 19 51 23 | 20 28 00 | .13 | 18 | 21 40 | |
| | | | W. N | 19 24 12 | 19 38 10 | 19 51 24 | 20 28 07 | .02 | 18.8 | 21 50 | |
| | | | W. E | 19 24 07 | 19 38 13 | 19 53 01 | 20 29 28 | .07 | 16.8 | 21 51 | |
| 121 | 8 | $I_v$ | V. | 2 48 39 | ---------- | 2 49 30 | 2 49 57 | .42 | 2.4 | 2 54 | V. C. 0.02 mm. Eqke., IV, origin S. of Mindoro. |
| | | | W. N | 2 48 36 | ---------- | 2 49 35 | 2 49 50 | .08 | 2.4 | 2 54 | |
| | | | W. E | 2 48 38 | ---------- | 2 49 36 | 2 49 52 | .06 | 2.4 | 2 54 | |
| 122 | 8 | $I_d$ | V. | 11 46 42 | ---------- | 11 46 52 | 11 48 19 | 1.06 | 2.4 | 12 02 | V. C. 0.95 mm. |
| 123 | 11 | $I_d$ | V. | 22 32 00 | ---------- | 22 32 08 | 22 32 11 | .02 | 2.4 | 22 33 | V. C. 0.01 mm. |
| 124 | 12 | $I_d$ | V. | 2 05 26 | ---------- | 2 05 36 | 2 06 05 | .08 | 2.4 | 2 09 | V. C. 0.09 mm. |
| 125 | 13 | $I_d$ | V. | 4 29 00 | ---------- | 4 29 10 | 4 29 48 | .04 | 2.4 | 4 31 | V. C. 0 02 mm. |
| 126 | 14 | $I_d$ | V. | 20 56 01 | ---------- | 20 56 19 | 20 56 21 | .11 | 2.4 | 20 59 | V. C. 0.01 mm. |
| 127 | 15–16 | $III_v$ | V. | 22 29 32 | ---------- | 22 30 31 | ---------- | ------ | ------ | ---------- | V. C. 0.82 mm. Origin E of N Luzon. |
| | | | H. WSW | 22 29 32 | ---------- | 22 30 28 | ---------- | ------ | ------ | ---------- | |
| | | | W. E | 22 29 40 | ---------- | 22 30 43 | ---------- | ------ | ------ | ---------- | |
| 128 | 15–16 | $III_r$ | V. | 22 30 51? | 22 35 30? | 22 39 56? | 22 46 11? | .32 | 12 | 0 55 | V. C. 0.92 mm. Origin S of Kagoshima (Japan). |
| | | | H. WSW | 22 30 52? | 22 35 33? | 22 40 27? | ---------- | ------ | ------ | 1 24 | |
| 129 | 17 | $II_r$ | V. | 13 13 35 | 13 16 01 | 13 18 40 | 13 21 04 | .03 | 14.4 | 13 54 | Origin NE of Formosa. |
| | | | H. WSW | 13 13 33 | 13 16 08 | 13 18 47 | 13 21 23 | .27 | 13.2 | 14 32 | |
| | | | W. N | 13 13 20 | 13 16 02 | 13 18 49 | 13 21 28 | .12 | 11.2 | 14 30 | |
| 130 | 19–20 | I | W. N | 23 40 32 | ---------- | ---------- | ---------- | ------ | ------ | 0 02 | |
| 131 | 20 | $I_d$ | V. | 22 43 13 | ---------- | 22 43 25 | 22 43 38 | .05 | 2.4 | 22 45 | V. C. 0.01 mm. |
| 132 | 22 | I | H. WSW | 8 13 07 | ---------- | 8 15 51 | 8 17 34 | .13 | 7.8 | 8 35 | |
| | | | W. N | 8 13 05 | ---------- | 8 15 54 | 8 16 48 | .03 | 5.2 | 8 33 | |
| 133 | 23 | $II_v$ | V. | 3 27 23 | ---------- | 3 27 32 | 3 27 54 | 1.70 | 2.4 | 3 40 | V. C. 0.48 mm. Eqke., IV, near southern coast of Luzon. |
| | | | W. N | 3 27 23 | ---------- | 3 27 34 | 3 28 43 | 1.19 | 4.8 | 3 40 | |
| 134 | 26 | II | V. | 16 37 17 | ---------- | 16 39 03 | 16 39 09 | .72 | 2.4 | ---------- | V. C. 0.02 mm. |
| 135 | 26 | I | H. WSW | 17 05 47 | ---------- | 17 07 30 | 17 08 00 | .25 | 9 | 17 34 | V. C. 0.01 mm. |
| 136 | 26 | I | W. N | 17 38 48 | ---------- | ---------- | ---------- | ------ | ------ | 18 08 | |
| 137 | 27 | I | H. WSW | ---------- | 12 12 47 | ---------- | ---------- | ------ | ------ | 12 27 | |
| 138 | 28 | $I_v$ | V. | 2 19 53 | ---------- | 2 20 21 | 2 20 23 | .18 | 2.4 | 2 22 | V. C. 0.03 mm. |
| 139 | 28 | $I_d$ | V. | 2 31 15 | ---------- | 2 31 52 | 2 32 00 | .04 | 2.4 | 2 34 | |
| 140 | 28 | I | H. WSW | 15 23 29 | ---------- | ---------- | ---------- | ------ | ------ | 15 52 | |
| 141 | 29 | I | H. WSW | ---------- | 1 56 58 | ---------- | ---------- | ------ | ------ | 2 28 | |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=7.8 seconds; WSW–ENE pendulum, T=8.3 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, $23^{h}$ $41^{m}$ $30^{s}$.* **SE de Luzón, Sámar y N de Leyte.** Temblor de tierra de intensidad III. Su epicentro se hallaba sin duda en el Pacífico y algo distante; á unos 500 kilómetros de Manila, hacia el extremo N de la Fosa "Planet" (125.5° longitud E y 13.5° latitud N); de manera que, la parte SE de Luzón, Catanduanes, Masbate, Sámar y N de Leyte, estaban comprendidas solo dentro de las isoseistes más externas, III y II. Así se explica que solamente algunos pocos observadores, de Nueva Cáceres, Virac y Tacloban, se diesen cuenta de él, además la hora era poco propicia. En el epicentro tuvo sin duda mucha mayor intensidad; así parecen indicarlo tanto la amplitud como la duración de la perturbación registrada por los seismógrafos de Manila: fué también registrado por los de Zikawei y es de suponer que por los otros del Extremo Oriente y aun tal vez por algunos del E de Europa.

3, $21^{h}$ $48^{m}$ $03^{s}$.* **Mindoro, Calamianes, Panay y Cuyo.** Temblor de intensidad IV, cuyo epicentro parece se hallaba al S de la isla de Mindoro, ó sea entre esta isla y la de Cuyo, no lejos de los 121° longitud E y 11.5° latitud N.

3, $21^{h}$ $51^{m}$ $12^{s}$.* **Catanduanes, Sámar y N de Leyte.** Temblor de tierra de intensidad III. Su epicentro parece ser el mismo que el del temblor del día 2, si bien tuvo mucha menor intensidad y extensión.

4, $7^{h}$ $51^{m}$. **Isla de Cuyo.** Temblor oscilatorio, intensidad III, duración 3 segundos. Este temblorcito, es probablemente una repetición del que tuvo lugar el 3, á $21^{h}$ $48^{m}$ $03^{s}$; Cuyo es la estación más próxima al epicentro arriba indicado.

5, $17^{h}$ $39^{m}$ $51^{s}$.* **Butuan** (N de Mindanao). Temblor oscilatorio, dirección NNE–SSW, intensidad III, duración muy larga, de cerca de un minuto.

6, $17^{h}$ $12^{m}$. **Guam** (Islas Marianas). Temblor de tierra de intensidad III.

8, $2^{h}$ $48^{m}$ $36^{s}$.* **Mindoro, Calamianes, Panay y Cuyo.** Temblor de tierra de intensidad IV, originado en el epicentro indicado para el temblor del día 3 á $21^{h}$ $48^{m}$ $03^{s}$; tuvo alguna mayor intensidad y sus isoseistes comprendieron una región algo más extensa.

10, $15^{h}$ $03^{m}$. **Guam** (Islas Marianas). Temblor de tierra de intensidad IV.

13, $3^{h}$ $34^{m}$. **E de Leyte y S de Sámar.** Temblor de tierra de intensidad III. Su epicentro se hallaba en el mar no lejos de la costa meridional de Sámar.

14, $23^{h}$ $58^{m}$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

15, $22^{h}$ $29^{m}$ $32^{s}$.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E–W, intensidad III, duración 10 segundos. Fué perceptible en toda la Provincia de Cagayán, según consta del aviso recibido de Tuguegarao donde tuvo intensidad II. Su origen parece se hallaba á unos 500 kilómetros de distancia de Manila y á unos 140 kilómetros al E de Aparri, no lejos del meridiano 123° E y del paralelo 18.5° N: esto es lo que puede deducirse de los seismogramas del Vicentini, Omori y Wiechert. Este temblor de tierra ocurrió unos dos minutos después del gran terremoto de Kagoshima que debió tener lugar á $22^{h}$ $26^{m}$ $40^{s}$ próximamente: las ondas de ambos seismos llegarían á Manila con una diferencia de poco más de un minuto. Por consiguiente el principio de nuestros seismogramas corresponde al temblor de tierra cuyo origen se hallaba al E del extremo N de la Isla de Luzón, siguiendo luego las ondas originadas por el gran terremoto de Kagoshima, cuyo comienzo sin embargo es muy difícil distinguir. Así pues las horas del principio y fin de los primeros movimientos preliminares ($22^{h}$ $29^{m}$ $32^{s}$ y $22^{h}$ $30^{m}$ $31^{s}$) que se da en los "Records of the seismographs" corresponden á la perturbación causada por el terremoto del NE de Luzón, y no al principio de la del de Kagoshima. La hora aproximada del principio de ésta (22$^h$ 30$^m$ 51$^s$ se ha sacado de los seismogramas, los cuales presentan á esta hora un cambio en el período y amplitud de las oscilaciones, que suponemos corresponder al arribo de las ondas seísmicas del centro de Kagoshima.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

19, 2$^h$ 52$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II. Repitió á 21$^h$ 30$^m$.

19, 20$^h$ 02$^m$. **Santo Domingo** (Islas Batanes). Temblor de tierra susultorio, intensidad II, duración 3 segundos. Repitió á 21$^h$ 23$^m$ con movimientos oscilatorios; dirección WSW–ENE, intensidad III, duración 5 segundos.

23, 3$^h$ 27$^m$ 23$^s$.* **S de Luzón y Mindoro.** Temblor de tierra de intensidad IV. Este temblor fué perceptible en la parte NE de Mindoro y en toda la S de Luzón, correspondiente á las Provincias de Batangas, Laguna y Tayabas; debió también sentirse en la isla de Marinduque: el epicentro parece se hallaba al E del paso de la Isla Verde, que separa á Luzón de Mindoro.

27, 8$^h$ 06$^m$. **Butúan** (N de Mindanao.) Temblor oscilatorio y susultorio, dirección ESE–WNW, intensidad III, duración 10 segundos.

## REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# BULLETIN FOR JULY, 1911.

# METEOROLOGICAL BULLETIN FOR JULY, 1911.

By Rev. JOSÉ CORONAS, S. J.,

*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—In view of the fact, that, as we shall see presently, atmospheric disturbances have been so very abundant during July, it will surprise nobody that the mean pressure of the month has been throughout the Islands below that for July of the preceding year. The differences have been especially notable on Luzon, since this island has felt the influence of the disturbances more than any other part of the Archipelago. For Manila the mean pressure differed from the normal for the month by —1.15 millimeters. The highest pressures have been observed generally throughout the Islands on the 3d to 5th; the lowest on the 22d or 23d in Mindanao and the Visayas, but on the 14th or 15th in Luzon.

The mean monthly temperature has likewise been slightly lower than that for the same month of 1910 in nearly all the stations. At Manila the extremes were 33.3° C and 21.4° C, registered on the 8th and 15th, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR JULY, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from July, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from July, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Tagbilaran | 757.60 | ---------- | 758.91 | 3 | 755.81 | 23 | ---------- | ---------- | ---------- | ---------- | ---------- | ---------- |
| Surigao | 57.26 | — 0.65 | 59.14 | 3 | 55.48 | 22 | 27.6 | + 0.6 | 33.7 | 24, 26 | 22.9 | 2, 3, 29 |
| Cebu | 57.30 | — .56 | 58.96 | 3 | 55.49 | 22 | 27.2 | — .1 | 32.6 | 3 | 22.8 | 21 |
| Iloilo | 57.43 | — .61 | 58.88 | 11 | 55.47 | 23 | 26.6 | — .6 | 32.6 | 4 | 21 | 24 |
| Ormoc | 57.45 | — .62 | 59.19 | 3 | 55.55 | 23 | 26.5 | + .3 | 31.8 | 9 | 21.9 | 6, 7, 14 |
| Tacloban | 57.25 | — 1.18 | 59.82 | 3 | 54.90 | 13 | 27.1 | — .1 | 34 | 7, 26 | 22.3 | 13 |
| Capiz | 57.10 | ---------- | 59.17 | 3 | 54.68 | 23 | 26.6 | ---------- | 35.7 | 17 | 22.6 | 1 |
| Calbayog | 56.95 | — .93 | 59.26 | 3 | 54.38 | 13 | 27 | + .3 | 33.2 | 9 | 22.3 | 5 |
| Legaspi | 56.31 | — 1.49 | 59.18 | 3 | 51.91 | 14 | 27 | — .4 | 35.7 | 7 | 22 | 10 |
| Atimonan | 55.93 | — 1.56 | 58.94 | 4 | 51.43 | 14 | 26.9 | — .6 | 33.8 | 26 | 22.1 | 13 |
| Paracale | 55.84 | ---------- | 59.12 | 4, 5 | 50.42 | 14 | 27.2 | ---------- | 34.7 | 9 | 22.4 | 14 |
| Manila | 56.14 | — 1.61 | 59.10 | 5 | 52.21 | 15 | 26.4 | — .3 | 33.3 | 8 | 21.4 | 15 |
| San Isidro | 55.75 | — 1.87 | 58.96 | 4 | 51.16 | 15 | 25.9 | — .7 | 34.4 | 8 | 21.5 | 6 |
| Dagupan | 55.43 | — 2.05 | 58.88 | 5 | 50.37 | 15 | 26.3 | — 1 | 35.9 | 8 | 20.4 | 14 |
| Bolinao | 54.94 | — 2.25 | 58.71 | 5 | 49.17 | 15 | 26.2 | — .9 | 33.4 | 8 | 20.9 | 15 |
| Baguio[1] | 633.54 | — 2.15 | 636.78 | 5 | 627.06 | 15 | 17.7 | — .2 | 24.1 | 8 | [2]13.6 | 14 |
| Vigan | 754.61 | — 2.80 | 758.78 | 5 | 745.19 | 15 | 26.7 | — .4 | 33.2 | 7 | 21.3 | 26 |
| Tuguegarao | 54.39 | — 2.65 | 59.20 | 5 | 43.47 | 15 | 27.5 | — .5 | 36.9 | 8 | 21 | 15 |
| Aparri | 54.32 | — 2.85 | 59 | 5 | 43 | 15 | 27 | — .8 | 34.7 | 11 | 22 | 5, 16 |

[1] The barometric readings of this station are not reduced to sea level. [2] From 29 days of observation.

**Precipitation.**—With the exception of those in Mindanao, nearly all the stations report a rainfall in excess of that during July, 1910. In central and northern Luzon the rains were rather abundant from the 13th or 14th to the end of the month. The following monthly amounts (in millimeters) measured at the stations of western Luzon are worth special mention: Laoag, 1,083.9; Vigan, 1,641.5; Candon, 1,171.6; San Fernando, Union, 1,078.7; Baguio, 3,381.7; Bolinao, 1,891.4; Dagupan, 1,300.4; Iba, 1,832.2. The total amount collected during the month at Manila was 698.5 millimeters, which exceeds the normal for July by 302.7 millimeters. Further on, when speaking of the typhoons of this month, we shall give more particulars about the most extraordinary rainfall during this month.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JULY, 1911.

| Station. | Total. | Departure from July, 1910. | Rainy days. | Departure from July, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from July, 1910. | Rainy days. | Departure from July, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 101 | — 36.2 | 8 | — 1 | 22.9 | 6 | Calapan | 276.4 | + 165.4 | 22 | +11 | 84.6 | 22 |
| Isabela, Basilan | 116.9 | — 4.1 | 9 | — 9 | 32.2 | 29 | Virac | 419.7 | + 326.5 | 17 | + 2 | [b]137 | 13 |
| Zamboanga | 59.3 | — 24.9 | 9 | — 1 | 12.7 | 29 | Nueva Caceres | 455.9 | + 319.8 | 22 | + 9 | 121.7 | 1 |
| Davao | 107.9 | — 68.9 | 6 | — 5 | 36.8 | 27 | Batangas | 472.6 | + 410.1 | 19 | + 9 | 128.5 | 14 |
| Butuan | 65.6 | — 85.6 | 8 | — 3 | 31 | 28 | Atimonan | 309.2 | + 218 | 22 | + 9 | 90.7 | 1 |
| Dumaguete | 166.1 | — 6.3 | 16 | + 6 | 26.3 | 30 | Silang | 454.9 | + 215.7 | 16 | + 4 | 108.7 | 14 |
| Yap, W. Carolines | 1,162.2 | +974.5 | 30 | + 7 | 319.3 | 18 | Paracale | 572.1 | ------ | 18 | ------ | 308.9 | 1 |
| Tagbilaran | 98.2 | + 29.7 | 8 | — 1 | 34.5 | 4 | Santa Cruz, La Laguna | 484.7 | ------ | 26 | ------ | 126.5 | 1 |
| Surigao | 217 | + 73.9 | 13 | + 1 | 69.1 | 27 | Manila | 698.5 | + 483.6 | 26 | +10 | 117 | 15 |
| Maasin | 493.3 | +267 | 12 | + 3 | 105.5 | 28 | Antipolo | 1,064.5 | + 829.7 | 26 | + 7 | 166.9 | 15 |
| Cebu | 123.9 | + 10.4 | 18 | + 4 | 35.9 | 28 | Iba | 1,832.2 | +1,418.9 | 27 | + 7 | 242.3 | 1 |
| Iloilo | 758.5 | +701.5 | 25 | +16 | 133.6 | 23 | San Isidro | 676.4 | + 498.1 | 27 | + 5 | 95.7 | 15 |
| San Jose Buenavista | 736.6 | +498 | 28 | + 9 | 92.2 | 29 | Tarlac | 924.9 | + 711.3 | 25 | + 7 | 118.9 | 23 |
| Cuyo | 789.6 | +506.8 | 26 | +12 | 115.9 | 19 | Baler | 375.2 | + 289 | 20 | +11 | 62.7 | 1 |
| Ormoc | 321.2 | +169.3 | 20 | + 5 | 64.3 | 11 | Dagupan | 1,300.4 | +1,117.4 | 27 | + 9 | 204.4 | 17 |
| Guiuan | 189.8 | ------ | 17 | ------ | 70.6 | 7 | Bolinao | 1,891.4 | +1,637.2 | 27 | +10 | 467.1 | 15 |
| Tacloban | 230.6 | + 66.3 | 16 | — 3 | 68.8 | 12 | Baguio | 3,381.7 | +2,976.5 | 29 | + 1 | 879.8 | 14 |
| Capiz | 222.2 | ------ | 22 | ------ | 52.4 | 8 | San Fernando, Union | 1,078.7 | ------ | 21 | ------ | 158.6 | 24 |
| Borongan | 154.7 | — 76.7 | 17 | — 3 | 32.3 | 12 | Echagüe | 277.2 | + 105.8 | 20 | + 5 | 79 | 1 |
| Calbayog | 263.1 | + 45.7 | 18 | + 2 | 91.5 | 12 | Candon | 1,171.6 | + 821.3 | 25 | +10 | 201.9 | 15 |
| Masbate [a] | 235.7 | ------ | 19 | ------ | 45 | 30 | Vigan | 1,641.5 | +1,336 | 22 | + 2 | 287.4 | 15 |
| Romblon | 263.8 | ------ | 23 | ------ | 48 | 13 | Tuguegarao | 552.6 | + 463.9 | 18 | + 8 | 178.1 | 31 |
| Laoang | 312.6? | ------ | 18 | ------ | 65 | 12 | Laoag | 1,083.9 | + 688.7 | 20 | + 5 | 181.9 | 16 |
| Gubat | 254.4 | +197.3 | 17 | + 6 | 71.7 | 13 | Aparri | 506.6 | + 484.6 | 16 | + 9 | 103.7 | 31 |
| Legaspi | 311.1 | +111.8 | 23 | +11 | 129.8 | 13 | Sto. Domingo, Batanes Is | 443.6 | + 182.7 | 21 | + 8 | 122.5 | 16 |
| Sumay, Guam | 360.1 | +102.4 | 27 | + 6 | 81.2 | 31 | | | | | | | |

[a] 28 days of observation. [b] Rainfall from 6 a. m. to 5 p. m. of the 13th.

## DEPRESSIONS AND TYPHOONS.

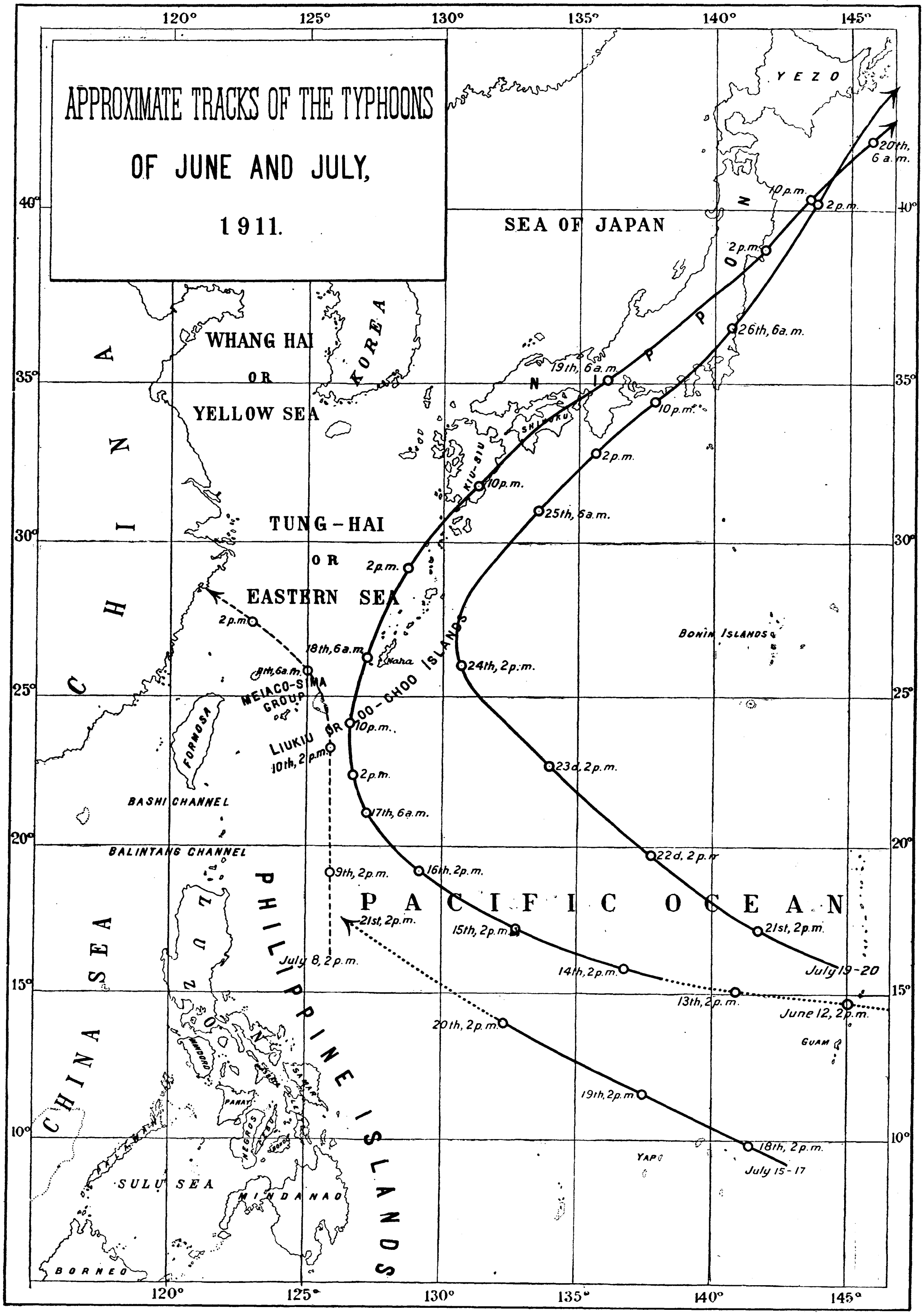
The month of July of the present year may justly be considered as one of the most stormy for the Philippines. No fewer than seven typhoons have been observed during the same in the region lying between the Mariana Islands and Indo-China. Of these, three crossed the Archipelago north of Manila and one came uncomfortably close to the west coast of Luzon. Since, however, the last of the typhoons of the month mentioned as having crossed the Archipelago, did not reach our meridian until August 1, we postpone its discussion until the Bulletin for the latter month. Consequently there remain six typhoons to be described, whose tracks may be seen on Plates II and III, on which are likewise shown those of the typhoons and depressions of June, as we said would be done when we discussed the latter in the Bulletin corresponding to the month of June.

### THE TYPHOON OF JUNE 29 TO JULY 5, 1911.

This typhoon appears to have formed from June 28 to 29 over the Pacific Ocean to the east of the central part of the Philippine Archipelago, nearer to the latter than to the Mariana Islands. Hence, its influence was felt neither in the Marianas nor in the Western Carolines and, consequently, its existence could not be announced until the morning of the 30th, or a little less than two days before the storm crossed Luzon Island. After having sent first caution to the easternmost stations in the Philippines, Manila Observatory dispatched the following warning to Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

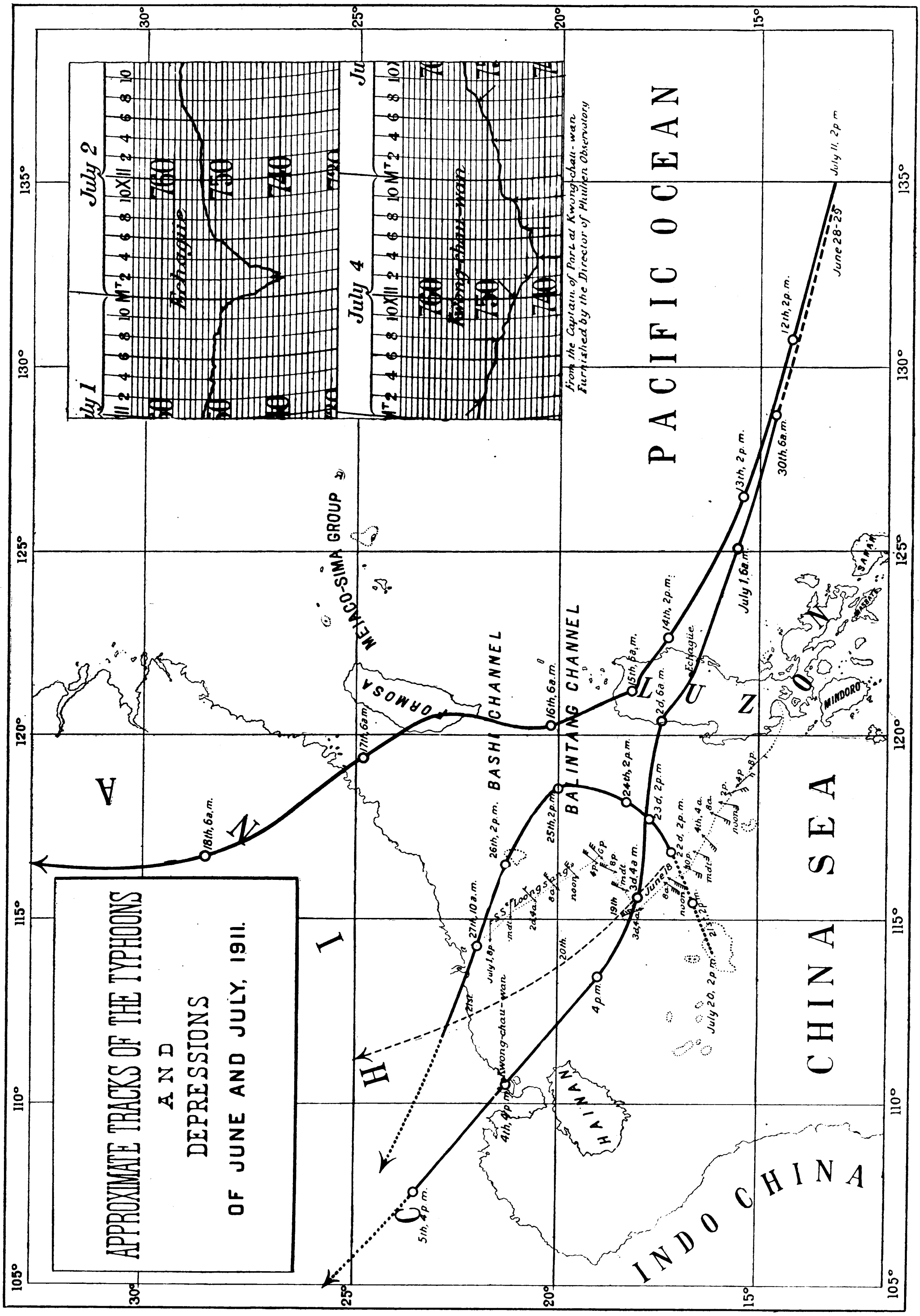
June 30, 10.20 a. m.: Typhoon east of northern Visayas or southeastern Luzon; direction unknown.

*Plate II.*


APPROXIMATE TRACKS OF THE TYPHOONS OF JUNE AND JULY, 1911.

*N. B.—For the discussion of the typhoon of June 12 to 20 see the Bulletin for June, page 150.*

Plate III.



APPROXIMATE TRACKS OF THE TYPHOONS AND DEPRESSIONS OF JUNE AND JULY, 1911.

N.B.—For the discussion of the depression of June 18 to 21 see the Bulletin for June, page 151

In the afternoon of the same day and the morning of the following, the position of the storm could be given with greater precision in the following cablegrams:

June 30, 4 p. m.: Typhoon east of southern Luzon, moving west-northwest or northwest.

July 1, 8.40 a. m.: Typhoon east of Luzon, less than 300 miles distant, moving west or west-northwest.

In the ordinary daily weather note issued at 11.50 a. m. we said:

The typhoon is situated this morning east of Luzon, at a distance of about 200 miles, moving to west or west-northwest.

The track of this typhoon (Plate III) shows that the vortex crossed Luzon in a northwesterly direction during the first hours of July 2. On the same plate we reproduce an accurate copy of the barograph curve traced at Echagüe, as this is the station which came to lie closest to the vortex.

To judge from the observations made on board the steamer *Loongsang*, en route from Hongkong to Manila, there seems to be no doubt possible that between meridians 120° and 116° east the storm moved almost due westward. The *Loongsang* passed in front of the vortex and very close to it in the early morning of the 3d. The barometric minimum aboard was 739.6 millimeters and was observed at 4 a. m. in longitude 115° 14′ east and latitude 18° 0′ north, with winds of force 10 from north-northwest. By 8 a. m. the wind had backed to SWbyS and blew with force 12 of the Beaufort scale by noon. From the vicinity of meridian 116° the typhoon took again a northerly direction, advancing almost to northwest during the 3d, 4th, and 5th. It entered China south of Kwong-chau-wan, during the afternoon of the 4th.

We subjoin the typhoon warnings issued by Manila Observatory on the 2d and 3d:

July 2, 10.20 a. m.: Typhoon west of northern Luzon, less than 100 miles distant, moving west-northwest.

July 3, 10.25 a. m.: Typhoon west of Balintang Channel, moving west-northwest or northwest.

The ordinary daily weather notes of the 3d to 5th contained the following references to the last part of the track of this typhoon:

July 3, 11.45 a. m.: The typhoon is situated to day over the China Sea west of Balintang Channel, moving apparently to NW by W.

July 4, 4 p. m.: The typhoon was situated this morning southwest of Hongkong, and continues moving to NWbyW.

July 5, 11.30 a. m.: The typhoon entered the Continent yesterday and is situated this morning over southwestern China, moving apparently westward.

Hongkong Observatory favored us with the following dispatches:

June 30, 11.15 a. m.: Typhoon southeast of Luzon, moving west-northwest.
July 1, 10.45 a. m.: Typhoon east of Luzon, moving west-northwest.
July 2, 11.30 a. m.: Typhoon northwest of Luzon, moving west-northwest.
July 3, 11.30 a. m.: Typhoon south-southeast of Hongkong, moving west-nortwest.
July 4, noon: Typhoon southwest of Hongkong, moving northwest.

The following warnings were sent by Zikawei Observatory to the stations on the China Coast:

June 30, 10 a. m.: Typhoon, far east of the Philippines; direction unknown.
June 30, 9 p. m.: Typhoon east of Luzon; direction WNW or WbyN.
July 1, 9 p. m.: Typhoon, center of Luzon, moving WNW or WbyN.
July 2, 2 p. m.: Typhoon northwest of Luzon, direction NWbyW or west-northwest.
July 2, 9 p. m.: Typhoon, center of Paracels, direction NWbyW or west-northwest.
July 3, 9 p. m.: Typhoon between Paracels and Hainan, direction northwest.
July 4, noon: Typhoon, Gulf of Tonkin, direction northwest.

## THE TYPHOON OR DEPRESSION OF JULY 8 TO 11, 1911.

A few words concerning this typhoon or depression will suffice, especially as we are not aware of its having acquired any considerable intensity. It appears to have formed on the 8th over the Pacific Ocean, east of Luzon, at a distance of less than 300 miles. It moved northward until a point east of Meiacosima, whence it took a northwesterly direction. According to all indications it filled-up before reaching the Continent, while north of Formosa, during the night of the 11th.

Manila sent the following dispatches relative to this disturbance:

July 9, 5.30 p. m.: Typhoon northeast of Luzon, moving north-northwest or north.

July 10, 11.50 a. m.: Typhoon southeast of Meiacosima Islands, moving north-northwest or north.

July 11, 10.20 a. m.: Typhoon west of Naha (Loochoo Islands), moving north.

July 11, 7.10 p. m.: Typhoon north of Formosa, moving northwest.

## THE TYPHOON OF JULY 11 TO 19, 1911.

The typhoon which crossed northern Luzon on July 14 and 15 was undoubtedly the most noteworthy of the month, owing to the great losses which it caused, especially in central Luzon. It must, however, be confessed that the damage was done chiefly indirectly, by the most unusually abundant rains and the floods which resulted therefrom during the passage of the storm and the succeeding days. The fall of the barometer and the force of the winds in the neighborhood of the vortex do not seem to have been anything extraordinary.

**Track of the typhoon.**—This storm appears to have formed on the 11th, to the northwest of Yap, approximately halfway between Guam and the Philippines. This follows with sufficient probability from a comparison of the observations made at Yap on the 11th with those of Guam and the Philippines.

On the 11th and 12th Manila Observatory cabled the following notices to its foreign correspondents:

July 11, 3.20 p. m.: Typhoon over the Pacific Ocean, about halfway between the Mariana Islands and Luzon; direction unknown.

July 12, 5.45 p. m.: Typhoon east of Luzon, more than 300 miles distant, moving northwest.

During the forenoon of the 13th the Observatory was able to announce that the storm threatened to cross northern Luzon in the following notice which was distributed in the capital:

July 13, 9 a. m.: The typhoon is situated east of the central part of Luzon moving apparently to west-northwest. It will probably cross northern Luzon by to-morrow.

To the meteorological centers of the Far East were sent these messages:

July 13, 9 a. m.: Typhoon east of Luzon, more than 300 miles distant, moving west-northwest.

July 13, 3.30 p. m.: Typhoon east of Luzon, less than 300 miles distant, moving west-northwest.

In the afternoon of the same day, the following information was forwarded to the newspapers:

July 13, 3.30 p. m.: Hurricane winds and stormy weather will probably prevail by to-morrow in northern Luzon; strong winds with rains and squalls in central and southern Luzon.

In the meanwhile all the stations in the Archipelago were being warned to take the necessary precautions against the violence of the approaching storm. We may remark that this was one of the occasions in which the entire Archipelago could be fully informed, and well in advance, of the existence and the movements of the storm, a circumstance due to the fact that telegraphic communication with the north of Luzon was not interrupted until the evening of the 14th.

During the afternoon of the 14th the newspapers of the capital were informed as follows:

July 14, 3.30 p. m.: The typhoon entered the Island of Luzon at 2 p. m. It is crossing at present the Province of Cagayan and will cross to-night the Province of Ilocos Norte. It continues moving to west-northwest.

On the same day the following notes were cabled to the foreign meteorological centers:

July 14, 9 a. m.: Typhoon east of northern Luzon, moving west-northwest or northwest.
July 14, 4.15 p. m.: Typhoon crossing northern Luzon, moving west-northwest.

The reader is invited to compare the final track of this typhoon, shown on Plate IV, with the preceding statements, and he will notice that the same differs very slightly from that described in the said warnings and weather notes. During the night of July 14 to 15 telegraphic communication with all the stations north of Dagupan was interrupted, which made it impossible to detect and announce earlier than the 16th the northerly deflection which the storm track suffered while the vortex was still within Luzon, between Aparri and Laoag. In the following table we give some of the observations made during the passage of the storm at Tuguegarao, Aparri, and Laoag. Their analysis, and especially a comparison of the observations made at Laoag with those of Aparri, shows clearly that the typhoon, instead of continuing to approach the former station on its west-northwesterly or northwesterly course, deviated considerably from the latter toward north, in the direction of the Balintang Channel.

METEOROLOGICAL OBSERVATIONS FOR JULY 13 TO 16, 1911.

| Date and hour. | Tuguegarao. | | | | | Laoag. | | | | | Aparri. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pressure. | Wind. | | Weather. | Rainfall (daily total). | Pressure. | Wind. | | Weather. | Rainfall (daily total). | Pressure. | Wind. | | Weather. | Rainfall (daily total). |
| | | Direction. | Force. | | | | Direction. | Force. | | | | Direction. | Force. | | |
| July 13: | *mm.* | | *0-12.* | | *mm.* | *mm.* | | *0-12.* | | *mm.* | *mm.* | | *0-12.* | | *mm.* |
| 2 p. m | 755.08 | NW | 3 | c | -------- | 754.95 | NNW | 5 | c | -------- | 755.24 | NNW | 2 | o | -------- |
| 6 p. m | 54.25 | NNW | 1 | o | -------- | 54.61 | NNE | 5 | o | -------- | 54.85 | N | 2 | o | -------- |
| 10 p. m | 54.58 | N | 1 | o,r | -------- | 55.25 | NNE | 3 | o | -------- | 54.90 | W | 4 | o,p | -------- |
| Midnight | 52.96 | Calm | -------- | o,r | 32.2 | -------- | -------- | -------- | -------- | 25.9 | 53.07 | N | 3 | o | 57.6 |
| July 14: | | | | | | | | | | | | | | | |
| 2 a. m | 51.47 | NW | 1 | o,r | -------- | -------- | -------- | -------- | -------- | -------- | 51.60 | N | 3 | o,r | -------- |
| 4 a. m | 49.58 | N | 2 | o,r | -------- | -------- | -------- | -------- | -------- | -------- | 50.85 | N | 4 | o,r | -------- |
| 6 a. m | 49.28 | NW | 3 | o,r | -------- | 51.85 | ESE | 3 | o,r | -------- | 50.50 | N | 4 | o,r | -------- |
| 8 a. m | 49.01 | NW | 2 | o,r | -------- | 51.51 | E | 3 | o,r | -------- | 49.57 | NNE | 3 | o,r | -------- |
| 10 a. m | 47.51 | NW | 3 | o,r | -------- | 50.70 | NNW | 3 | o,r | -------- | 49.17 | NNE | 4 | o,r | -------- |
| Noon | 45.34 | NW | 5 | o | -------- | 49.30 | NE | 5 | o,r | -------- | 47.46 | NE | 4 | o | -------- |
| 2 p. m | 43.66 | NW | 5 | o,q | -------- | 48.18 | N | 5 | o | -------- | 46.72 | NE | 4 | o,r | -------- |
| 4 p. m | 42.62 | NW | 6,7 | o,q | -------- | 46.99 | NNW | 6 | o,q | -------- | 45.37 | NE | 4 | o,r | -------- |
| 6 p. m | 41.42 | NW | 7,8 | o | -------- | 46.39 | NNW | 7 | o,q | -------- | 44.87 | NNE | 4 | o,r | -------- |
| 8 p. m | 40.71 | NW | 9 | o | -------- | 16.10 | NNW | 8 | o,q | -------- | 44.59 | NNE | 4 | o,r | -------- |
| 10 p. m | 39.05 | NW | 11 | o,q | -------- | 45.60 | NNW | 8 | o,q | -------- | 43.71 | NE | 4 | o | -------- |
| Midnight | 36.87 | NW | 11 | o,q | 127.8 | 44.82 | NNW | 8 | o,q | 138.5 | 43.71 | NE | 5 | o,q | 36.1 |
| July 15: | | | | | | | | | | | | | | | |
| 1 a. m | 36.83 | NW | 12° | o,q | -------- | 44.02 | NNW | 8 | o,q | -------- | 41.04 | NE | 6 | o | -------- |
| 2 a. m | 38.55 | W | 4 | o,q | -------- | 43.74 | NNW | 8 | o,q | -------- | 40.30 | NE | 5 | o | -------- |
| 3 a. m | 39.87 | SW | 7,8 | o,q | -------- | 43.04 | NNW | 8 | o,q | -------- | 40.17 | NE | 4 | o,q | -------- |
| 4 a. m | 41.03 | SW | 12° | o,q | -------- | 42.24 | NNW | 8 | o,d | -------- | 40.27 | E | 3 | o,q | -------- |
| 6 a. m | 42.83 | SE | 6 | o,r | -------- | 42.21 | NNW | 8 | o | -------- | 41.68 | E | 2 | o,r | -------- |
| 1 p m | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 42.50 | S | 7 | -------- | -------- |
| 2 p. m | 43.62 | SE | 6 | o | -------- | 42.56 | W | 4 | o,r | -------- | 42.46 | S | 6 | o,r | -------- |
| 6 p. m | 45.07 | SE | 5,6 | o,r | -------- | 44.15 | WSW | 5 | o | -------- | 44.27 | S | 5 | o,r | -------- |
| 10 p. m | 47.06 | SE | 3 | o,d | 26.4 | 45.03 | WSW | 10 | o,q | 169.7 | 46.38 | S | 3 | o | 47.2 |
| July 16: | | | | | | | | | | | | | | | |
| 6 a. m | 47.76 | SE | 1 | o | -------- | 47.86 | SW | 10 | o,q | -------- | 46.99 | S | 2 | o,r | -------- |
| 2 p. m | 49.23 | Calm | -------- | o,d | -------- | 50.26 | SSW | 8 | o,q | 181.9 | 48.63 | S | 1 | o,r | 18.9 |

The following typhoon warnings were issued by Manila Observatory on the 15th to 17th:

July 15, 9.20 a. m.: Typhoon west of Aparri, moving west-northwest.

July 16, 9 a. m.: Typhoon west of Bashi Channel, moving northwest or north-northwest.

July 17, 8.45 a. m.: Typhoon near or over Formosa, moving north-northeast or northeast.

July 17, 3.15 p. m.: Typhoon near or over the northern part of Formosa Channel, moving north or north-northeast.

The further course of the storm, across Formosa Channel and within the continent (Plate III), has been traced with the greatest possible approximation with the aid of the China Coast Register of Hongkong Observatory, the daily weather maps of Zikawei

Observatory, and the observations made at the station of Middle-Dog light-house, in the northern part of Formosa Channel.[1]

**Heavy rains and floods in Luzon.**—In an advance sheet published September 6, 1911, we made the following comments on the typhoon of July 15:

> The most striking feature of this typhoon were the extraordinarily heavy rains which from July 14 to 17 fell in western Luzon, but especially in Baguio. On the map (Plate IV) the reader will find the total amount of rainfall, expressed in millimeters, as measured at the various stations during these four days. It seems incredible that during so short an interval of time 2,238.7 millimeters should have fallen at Baguio; and we would have had difficulties in believing it, had we not found it thus registered by the pluviometer on the "quadruple register" as used at the first-class stations of the Weather Bureau. We intend to publish a portion of these tracings in the Monthly Bulletin, as we consider it of great importance that these data be fully demonstrated, especially as we do not know of any instance in which similar torrential rains have been registered in any other part of the globe.
>
> The total amount of precipitation given for Baguio was distributed over the four days as follows: On the 14th, 879.8 millimeters; 15th, 733.6 millimeters; 16th, 424.9 millimeters; 17th, 200.4 millimeters.

In fulfillment of the foregoing promise we reproduce on Plate V accurate copies of the records traced at Mirador Observatory, Baguío, by the Friez quadruple register from noon of the 14th to noon of the 15th, as the heaviest rains fell during these twenty-four hours. The only point in which the copy departs from the original consists in this, that in the former the records of the wind velocity and the rainfall have each been given in a separate group, while in the original they are mutually interlined. Hence, the width of the copy is about one-third greater than that of the original; but this modification was deemed necessary, lest the reader be bewildered by the multitude of lines and recording marks.

A study of these curves gives a good idea of the violence of the wind and rain at Baguio from July 14 to 15. As regards the latter, the following data furnished by the 24-hour record in question are especially noteworthy:

| Periods of maximum rainfall at Baguio. | Millimeters. | Inches. | P. M. of 14th. |
|---|---|---|---|
| Total rainfall from noon of 14th to noon of 15th | 1, 168. 1 | 45. 99 | |
| Greatest hourly amounts | 89. 9<br>91. 4 | 3. 54<br>3. 60 | 4 to 5.<br>3. 50 to 4. 50. |
| Greatest rainfall: | | | |
| In 10 minutes | 18. 3 | 0. 72 | 4. 32 to 4. 42. |
| In 5 minutes | 10. 2 | 0. 40 | 4. 32 to 4. 37. |

The accounts which the daily papers published of the enormous losses caused by the heavy rains and consequent floods on July 16 to 18, are presumably still fresh in the memory of everybody. Above all deserve to be mentioned the damages done to the railway from Manila to Naguilian and Camp One and to the Benguet Road. On Plate VI we reproduce some photographs of the inundation, taken at Dagupan and Lingayen on the 17th and kindly sent us by the chief observer at Dagupan, Mr. Domingo Torres. The following paragraphs are taken from the reports of the observers at San Isidro (Nueva Ecija), Dagupan, Vigan, Laoag, and Tuguegarao.

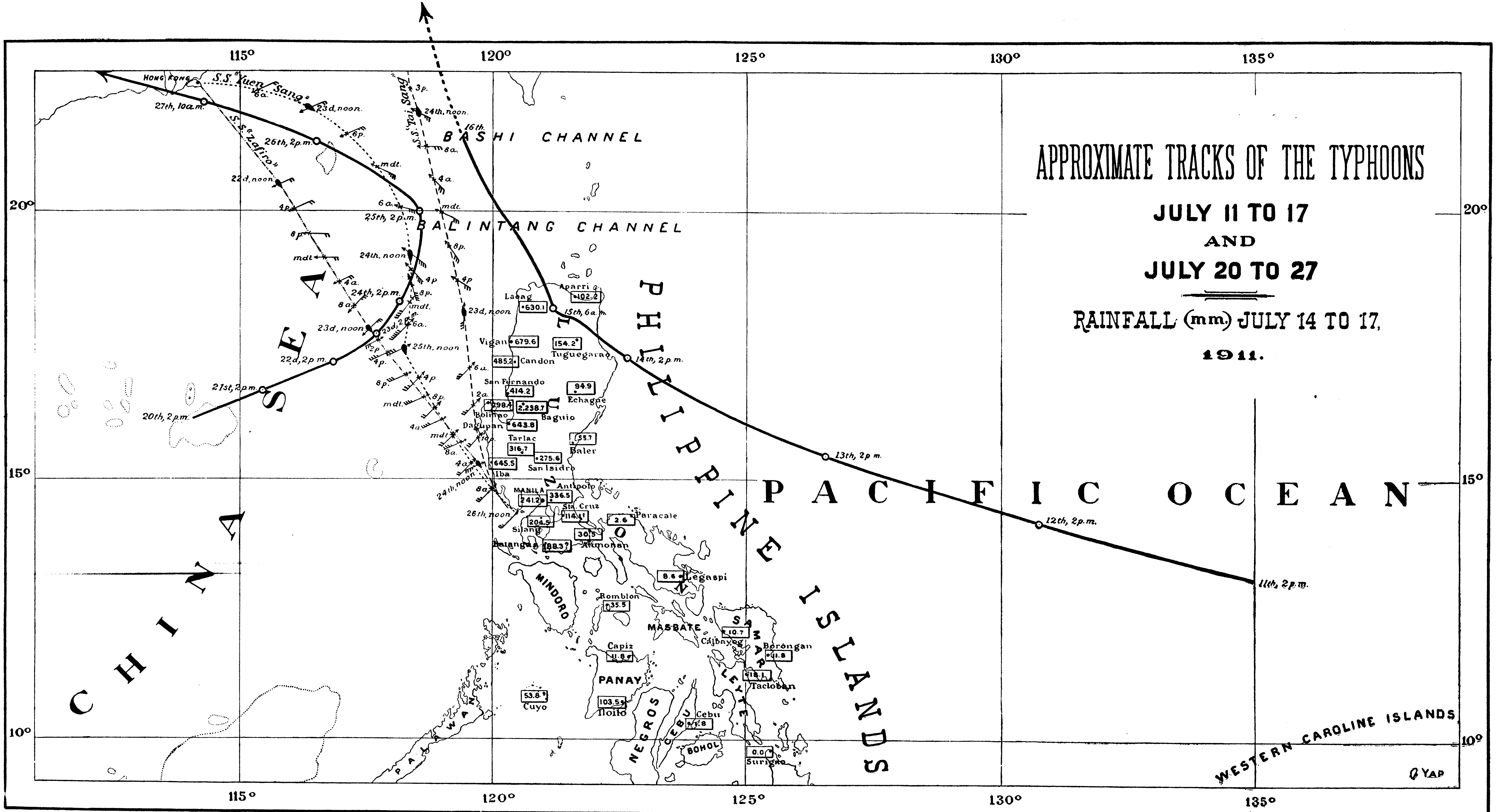
*San Isidro, Nueva Ecija.*—In consequence of the rains in the north, the river of this town has risen sufficiently to flood the lower parts of this Capital, the water reaching up to one's waist where it is deepest.

*Dagupan.*—In the early morning of the 16th this place was flooded, the water attaining a depth of 4 feet (1.2 meters) in the lowest portions as, for instance, at the railway station, and of 2 to 3 feet (0.6 to 0.9 meters) elsewhere. The inundation lasted

---

[1] These notes were ready for the printer when we received from Mr. Kondo, the Director of Taihoku Observatory, some valuable data on this typhoon together with the track of same across western Formosa and the Formosa Channel. This information came just in time to modify slightly that part of the track on plate III. Such modification, however, could not be introduced on plate IV, as it had been printed before and distributed as an advance sheet of this Bulletin.

Plate IV.



APPROXIMATE TRACKS OF THE TYPHOONS

JULY 11 TO 17

AND

JULY 20 TO 27

RAINFALL (mm) JULY 14 TO 17,

1911.

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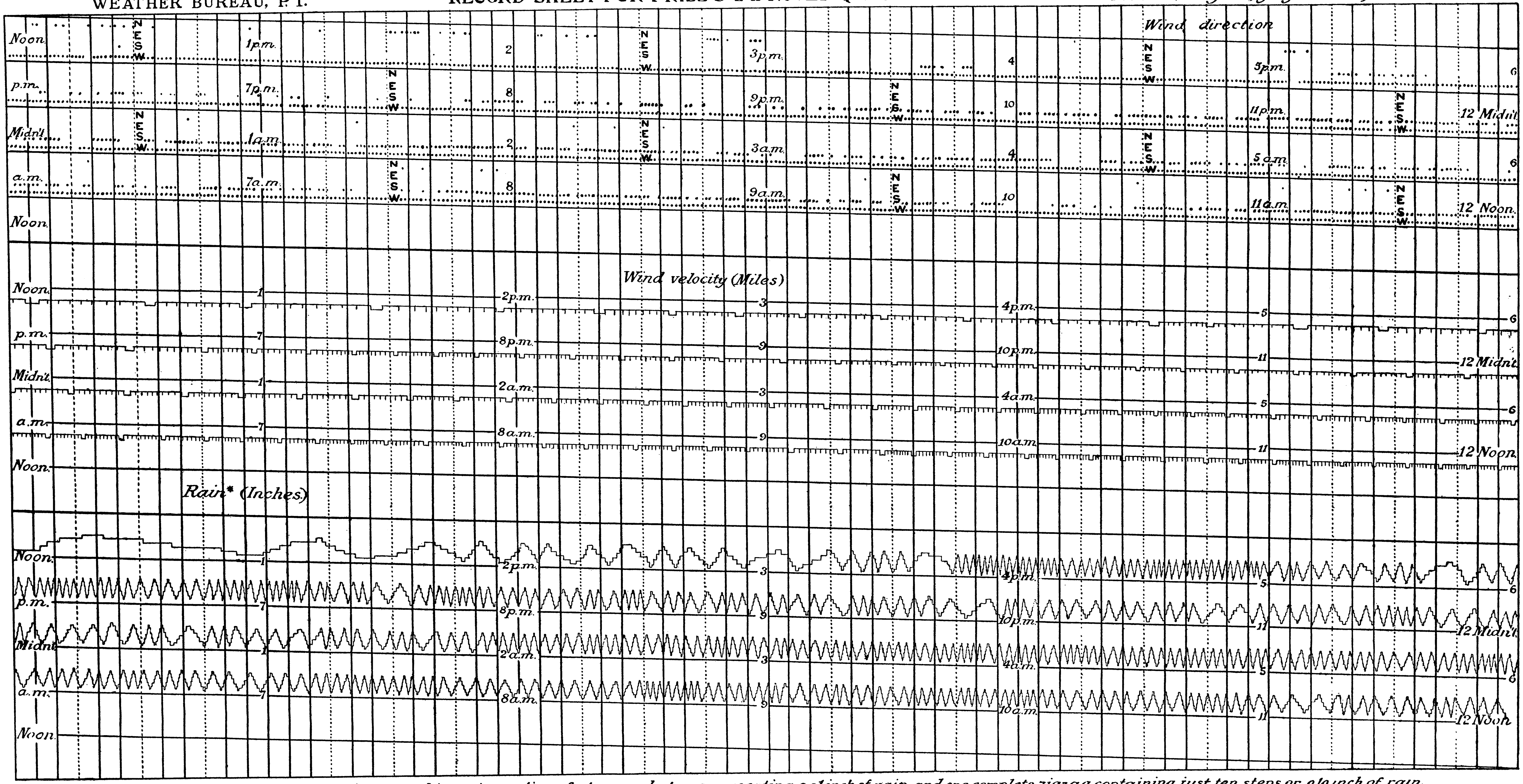
WEATHER BUREAU, P. I.

RECORD SHEET FOR FRIEZ'S IMPROVED QUADRUPLE REGISTER.

Station *Baguio, July 14 to 15, 1911.*



* The recording pen traces its record in a zigzag line of steps: each step representing 0.01 inch of rain, and one complete zigzag containing just ten steps or 0.10 inch of rain.

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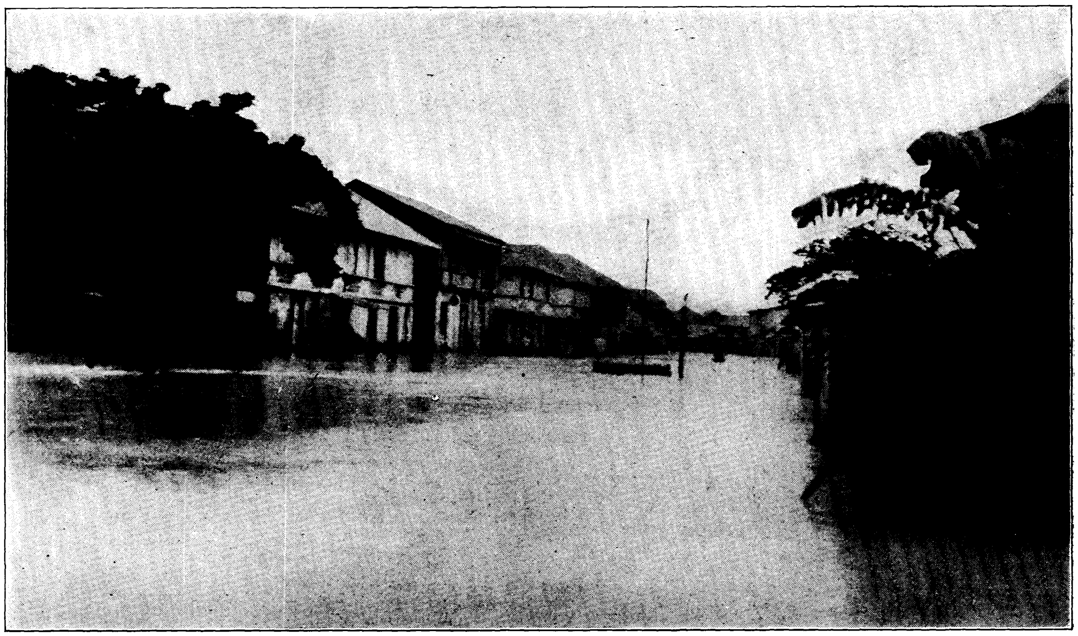
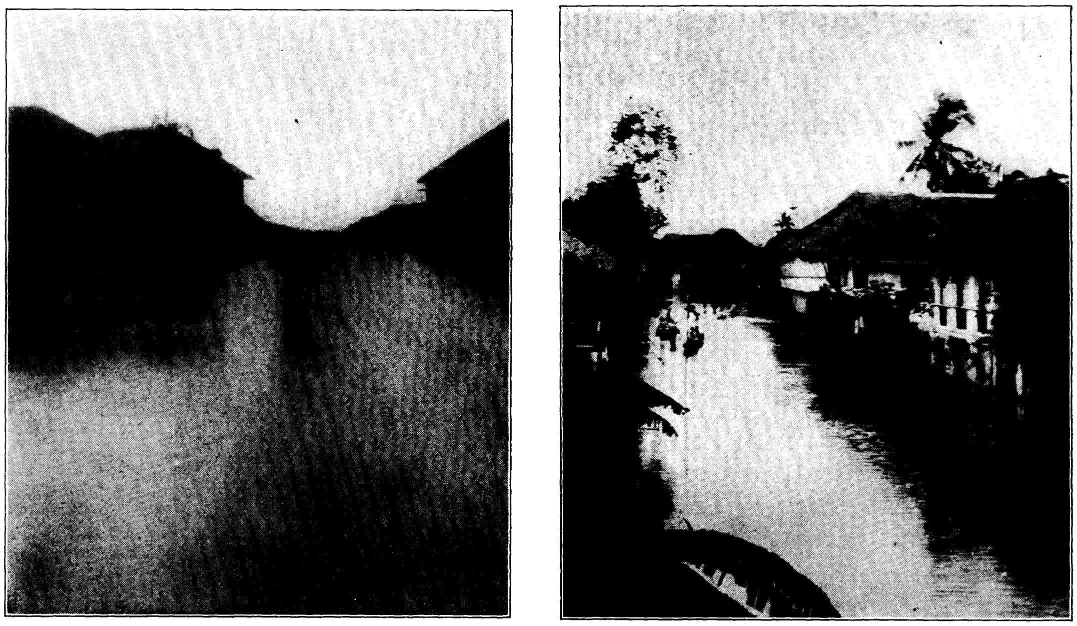
*Plate VI.*



MAIN STREET, DAGUPAN.



MAIN STREET, DAGUPAN.

ROSARIO STREET, LINGAYEN.

FLOODS IN DAGUPAN AND LINGAYEN, PANGASINAN, JULY 16 TO 18, 1911.

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until the 18th, on which it was likewise considerable in Binmaley and Lingayen, so much so that, when two veterinarians who had left Dagupan before noon of the 18th en route for Lingayen, reached the place within the jurisdiction of Binmaley, where the road to San Carlos branches off, the powerful current swept along their conveyance with the result that the horse was drowned and the two men were in great danger. But finally they succeeded in returning safely to Dagupan at 5 o'clock in the evening of the same day.

To give you some idea of the flood, I take pleasure in forwarding some photographic views which were taken on the 17th, since nobody ventured to do it on the 16th, cowed by the rising flood.

*Vigan.*—The destruction of the roads is due to the excessive rains. The old people of Narvacan, a place south of Vigan, aver that this is the first time they have ever witnessed a flood such as this through which they have just passed.

*Laoag.*—As regards the damage done by this typhoon, I am as yet unable to report on it to the Central Office. The torrential rains have caused all the water courses to rise to such extent that for three days communication with other places has been impossible.

*Tuguegarao.*—No loss of life is to be lamented, but in consequence of the flood the maiz and rice crops are completely ruined, since the Cagayan and Pinacanan Rivers overflowed their banks. We expect days of scarcity and desolation; the price of rice has already risen atrociously in this part of the country.

**Anomalies of this typhoon.**—In the beginning of the present discussion we stated that "the force of the winds in the neighborhood of the vortex does not seem to have been anything extraordinary." In reality, turning to the observations of Tuguegarao, Laoag, and Aparri (see corresponding table), we find that the last two report a maximum wind velocity of 10 and 7 of the Beaufort scale, respectively; and even though Tuguegarao recorded force 12, this lasted only a very short time and resulted in relatively little damage, to judge from the report of the observer in charge of the station.

So much the more is it to be wondered that, with relatively moderate violence near the center, the winds should have acquired force 8 or 9 of the same scale at distant points such as, for instance, Manila and Iloilo, in which two cities they caused a number of accidents and did some damage. Regarding this point, the chief observer of Iloilo writes:

> The typhoon which made itself felt from the 14th onward, has caused in this town greater damage than the one during November of last year.[1] For, though the barometer did not even fall to 754 millimeters, violent wind squalls prevailed during several days. The houses of light and mixed materials which have been destroyed number 42; some built of strong materials have likewise suffered to some extent.

We must content ourselves with merely mentioning these anomalies, as we have thus far not been able to find any satisfactory explanation for them.

**Typhoon warnings of Hongkong and Zikawei Observatories.**—We close the discussion of this storm by inserting the notices concerning same received from the director of Hongkong Observatory and those which Zikawei Observatory issued to the stations on the China coast.

**Hongkong:**

July 13, noon: Typhoon east of Luzon, moving west-northwest.
July 14, 11.30 a. m.: Typhoon northeast of Manila, moving west-northwest.
July 14, 4.45 p. m.: Typhoon in northern Luzon, moving west-northwest.
July 15, 11.30 a. m.: Typhoon northwest of Luzon, moving northwest.
July 16, 10 a. m.: Typhoon west of Bashee Channel, moving north-northwest.
July 17, 10.30 a. m.: Typhoon in northern part of Formosa Channel, moving north.

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[1] It is to be remarked that the typhoon of November, 1910, passed near to Iloilo, since it crossed through the center of Panay Island. See Monthly Bulletin, November, 1910.

**Zikawei:**

July 12, 9 p. m.: Typhoon latitude 15° to 20°, longitude 130° to 135°, direction northwest.
July 13, 4.30 p. m.: Typhoon east of Luzon, direction northwest.
July 14, 9 p. m.: Typhoon, central Luzon, direction northwest.
July 15, 8.30 a. m.: Typhoon, northwest of Luzon, direction northwest.
July 16, noon: Typhoon, south of Pescadores, direction north.
July 17, 8.30 a. m.: Typhoon, center of Formosa Channel, direction north.
July 17, 11.30 a. m.: Typhoon, off Ockseu, direction north.

## TWO TYPHOONS OVER THE PACIFIC OCEAN, JULY 15 TO 26, 1911.

The observations made at our stations of Guam and Yap during the period of July 15 to 21, which are embodied in the following table, leave hardly any doubt regarding the existence of two different typhoons, one of which originated in the Western Carolines from the 15th to 17th; the other in the neighborhood of the Mariana Islands, on July 19th to 20th:

METEOROLOGICAL OBSERVATIONS FOR JULY 15 TO 21, 1911.

| Date and hour. | Sumay, Guam, Ladrone Islands. | | | | Yap, Western Carolines. | | | |
|---|---|---|---|---|---|---|---|---|
| | Pressure. | Wind. | | Rainfall (daily total). | Pressure. | Wind. | | Rainfall (Daily total). |
| | | Direction. | Force. | | | Direction. | Force. | |
| July 15: | *mm.* | | *0-12.* | *mm.* | *mm.* | | *0-12.* | *mm.* |
| 6 a. m | 758.27 | ENE | 1 | -------- | 758.27 | Calm | ------ | -------- |
| 2 p. m | 56.65 | NE | 3 | 1.3 | 57.78 | Calm | ------ | 41.4 |
| July 16: | | | | | | | | |
| 6 a. m | 56.67 | ENE | 3 | -------- | 56.83 | NW | 1 | -------- |
| 2 p. m | 55.13 | ENE | 5 | -------- | 55.15 | Calm | ------ | 103.4 |
| July 17: | | | | | | | | |
| 6 a. m | 55.15 | ENE | 4 | -------- | 54.97 | NW | 1 | -------- |
| 2 p. m | 54 | ENE | 6 | 11.5 | 54.30 | NNW | 1 | 23.6 |
| July 18: | | | | | | | | |
| 2 a. m | -------- | -------- | ------ | -------- | 52.42 | NNW | 1 | -------- |
| 4 a. m | -------- | -------- | ------ | -------- | 52.17 | NNW | 3 | -------- |
| 6 a. m | 53.90 | ENE | 5 | -------- | 52.22 | NNW | 4 | -------- |
| 10 a. m | 54.33 | ENE | 4 | -------- | 52.02 | NNW | 3 | -------- |
| Noon | 53.48 | ENE | 4 | -------- | 51.14 | Calm | ------ | -------- |
| 2 p. m | 52.68 | ENE | 6 | -------- | 49.89 | NW | 1 | -------- |
| 4 p. m | 52.25 | ENE | 5 | -------- | 49.26 | Calm | ------ | -------- |
| 6.20 p. m | -------- | -------- | ------ | -------- | 48.79 | W | 1 | -------- |
| 7 p. m | 53.33 | ENE | 4 | 6.3 | -------- | -------- | ------ | -------- |
| 8 p. m | -------- | -------- | ------ | -------- | 49.22 | Calm | ------ | -------- |
| 10 p. m | -------- | -------- | ------ | -------- | 49.29 | NNW | 1 | 319.3 |
| July 19: | | | | | | | | |
| 2 a. m | -------- | -------- | ------ | -------- | 48.36 | Calm | ------ | -------- |
| 4 a. m | -------- | -------- | ------ | -------- | 48.13 | NW | 2 | -------- |
| 6 a. m | 52.40 | SW | 1 | -------- | 49.79 | WSW | 7 | -------- |
| Noon | 51.97 | SW | 3 | -------- | 50.99 | WSW | 6 | -------- |
| 2 p. m | 51.37 | SW | 3 | -------- | 50.96 | SW | 6 | -------- |
| 4 p. m | 51.10 | SW | 3 | 15.2 | 50.26 | WSW | 5 | -------- |
| 8 p. m | -------- | -------- | ------ | -------- | 51.72 | WSW | 5 | 22.1 |
| July 20: | | | | | | | | |
| 6 a. m | 50.45 | S | 7 | -------- | 52.42 | SW | 3 | -------- |
| 10 a. m | 50.52 | S | 7 | -------- | -------- | -------- | ------ | -------- |
| 2 p. m | 49.47 | S | 8 | -------- | 52.72 | SW | 3 | 19.8 |
| 4 p. m | 49.67 | SWbyS | 8 | -------- | -------- | -------- | ------ | -------- |
| 7 p. m | 50.60 | SSW | 8 | 10.2 | -------- | -------- | ------ | -------- |
| July 21: | | | | | | | | |
| 6 a. m | 50.97 | SSW | 7 | -------- | 53.30 | WSW | 2 | -------- |
| 10 a. m | 51.63 | SSW | 7 | -------- | -------- | -------- | ------ | -------- |
| 2 p. m | 50.53 | SSW | 6 | -------- | 52.90 | SW | 2 | 2.5 |
| 6 p. m | 51.95 | SW | 6 | 8.9 | -------- | -------- | ------ | -------- |

On the 17th and 18th, the winds and barometer readings of Yap as well as of Guam clearly indicated the existence of a typhoon in the Western Carolines, to the east of Yap. In the early morning of the 19th a barometric minimum of 748.13 millimeters was observed at Yap, with winds backing from northwest to west-southwest, while at the same time the barometer fell anew at Guam, with southwesterly winds setting in, after they had persistently come from east-northeast during the preceding three days. These data warrant the statement that, while the typhoon of the Carolines passed north of Yap in the direction west-northwest, a new center was developing near the central part of the Mariana group, to the north of Guam.

The typhoon of the Carolines appears to have died out on the 20th or 21st, long before reaching the Philippines; on the contrary, the typhoon of the Marianas gradually acquired great extension and full development. It advanced in a northwesterly direction until it was east of the Loochoo Islands, where it recurved toward Nippon Island, which it crossed, approaching close to the west and north of Tokyo during the night of July 25 to 26.

Relative to these disturbances the following typhoon warnings have been sent by Manila Observatory to Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

> July 17, 8.45 a. m.: Typhoon near or over the Western Carolines, direction unknown.
>
> July 18, 7 a. m.: Typhoon near or over the Western Carolines, moving west or west-northwest.
>
> July 19, 10.45 a. m.: Typhoon north of Yap (Western Carolines), moving west-northwest.
>
> July 19, 7 p. m.: Two typhoons: one northwest of Yap (Western Carolines), moving west-northwest; another near or over the northern Ladrone or Mariana Islands, moving west-northwest.
>
> July 20, 8:30 a. m.: Two typhoons: one north of the Pelew Islands, moving west-northwest; another west of the Ladrone or Mariana Islands, moving west.
>
> July 21, 6.30 p. m.: Two typhoons: one east of northern Luzon, less than 300 miles distant, filling up; another west of the northern Ladrone or Mariana Islands, inclining northward.

Before passing on to the discussion of the sixth typhoon of this month, we beg to mention that the observations made on Luzon on the 18th, especially those in the afternoon, seemed to indicate a new cyclonic center at a considerable distance to the east of the Philippines, as we announced at 3.35 p. m. of that day. But the telegrams received from our stations the following morning obliged us to send another cablegram with the information that the supposed typhoon had filled-up or was filling up east of the Archipelago.

## THE TYPHOON OF THE CHINA SEA, JULY 20 TO 28, 1911.

In the advance sheet already mentioned as having been published on September 6, we said:

> Even after the preceding typhoon had crossed the island on July 15, the rains may be said to have never ceased entirely in the western provinces of Luzon until after the 26th.
>
> A secondary center or area of low pressure hovered in the neighborhood of Luzon until on the 20th there formed in the China Sea a new typhoon, which made itself felt by renewed, more or less abundant rains throughout the same regions of the island which had been chastised so severely by the rains and inundations due to the preceding storm. As a result, the rivers rose, especially in central Luzon, and the floods increased again.
>
> As may be seen on the map (Plate IV), this typhoon moved at first toward east-northeast, approaching the northwest of Luzon, until it recurved toward west-northwest while west of Balintang Channel.
>
> The following amounts of rain have been recorded from July 20 to 26: Laoag, 228.3 millimeters; Vigan, 546.4 millimeters; San Fernando, Union, 459.6 millimeters; Baguio, 381.2 millimeters; Bolinao, 677.8 millimeters; Dagupan, 357.2 millimeters; Iba, 530.0 millimeters; Tarlac, 299.5 millimeters; Manila, 201.9 millimeters; Santa Cruz, Laguna, 118.2 millimeters; Batangas, 140.4 millimeters.
>
> The lowest barometer, 747.9 millimeters, was observed at Laoag at $5^h 15^m$ a. m. of the 25th.

In the following table we present part of the observations made during July 20 to 27 at the stations of Bolinao, Vigan, Laoag, and Santo Domingo (Batanes). A careful collation of these data will, we believe, convince the reader of the reliability of the track which we have assigned to this typhoon and which may be seen on Plates III and IV.

METEOROLOGICAL OBSERVATIONS FOR JULY 20 TO 25, 1911.

| Bolinao. | | | |
|---|---|---|---|
| Date and hour. | Pressure. | Wind. | |
| | | Direction. | Force. |
| July 20: | *mm.* | | *0–12.* |
| 6 a. m | 754.76 | S | 2 |
| 2 p. m | 54.11 | S | 4 |
| 10 p. m | 55.12 | SSE | 4 |
| July 21: | | | |
| 2 a. m | 54.32 | S | 4 |
| 6 a. m | 53.57 | S | 4 |
| 2 p. m | 53.15 | S | 4 |
| 10 p. m | 53.92 | SSE | 3 |
| July 22: | | | |
| 2 a. m | 53.07 | SSE | 2 |
| 6 a. m | 52.37 | SSE | 2 |
| 10 a. m | 53.18 | SSE | 3 |
| 2 p. m | 51.46 | SSE | 4 |
| 6 p. m | 50.91 | S | 4 |
| 10 p. m | 52.24 | S | 2 |
| July 23: | | | |
| 6 a. m | 50.65 | SSE | 4 |
| 2 p. m | 51.23 | SSW | 3 |
| July 24: | | | |
| 6 a. m | 50.35 | SSW | 4 |
| 2 p. m | 49.96 | SW | 4 |
| July 25: | | | |
| 6 a. m | 50.14 | SSW | 5 |
| 2 p. m | 50.85 | SSW | 3 |

| Vigan. | | | |
|---|---|---|---|
| Date and hour. | Pressure. | Wind. | |
| | | Direction. | Force. |
| July 20: | *mm.* | | *0–12.* |
| 6 a. m | 755.19 | ESE | 1 |
| 10 p. m | 54.97 | E | 1 |
| July 21: | | | |
| 6 a. m | 53.48 | SE | 1 |
| 2 p. m | 52.86 | S | 2 |
| July 22: | | | |
| 6 a. m | 52.64 | SE | 1 |
| 2 p. m | 51.14 | S | 2 |
| July 23: | | | |
| 6 a. m | 50.72 | SSE | 2 |
| 10 a. m | 51.71 | SSE | 3 |
| 2 p. m | 50.34 | SSE | 1 |
| 6 p. m | 50.66 | S | 3 |
| 10 p. m | 52.22 | S | 2 |
| July 24: | | | |
| 6 a. m | 50.42 | SSE | 4 |
| 2 p. m | 50.32 | S | 3 |
| 6 p. m | 49.63 | S | 3 |
| July 25: | | | |
| 6 a. m | 49.28 | SE | 6 |
| 2 p. m | 49.59 | S | 5 |
| July 26: | | | |
| 6 a. m | 51.76 | S | 4 |
| 2 p. m | 52.75 | SSW | 4 |

| Laoag. | | | |
|---|---|---|---|
| Date and hour. | Pressure. | Wind. | |
| | | Direction. | Force. |
| July 21: | *mm.* | | *0–12.* |
| 6 a. m | 753.56 | SE | 1 |
| 6 p. m | 53.52 | ESE | 2 |
| 8 p. m | 53.92 | E | 2 |
| July 22: | | | |
| 6 a. m | 52.86 | E | 1 |
| 6 p. m | 51.25 | NNE | 1 |
| July 23: | | | |
| 6 a. m | 50.27 | E | 1 |
| 10 a. m | 51.59 | SE | 2 |
| 2 p. m | 49.99 | SSW | 3 |
| July 24: | | | |
| 6 a. m | 50.22 | SSW | 3 |
| 2 p. m | 50.11 | S | 4 |
| 4 p. m | 48.57 | SSE | 2 |
| 6 p. m | 49.31 | S | 2 |
| July 25: | | | |
| 6 a. m | 47.98 | S | 6 |
| 2 p. m | 49.38 | SSW | 6 |
| July 26: | | | |
| 6 a. m | 51.54 | SSW | 2 |
| 2 p. m | 52.41 | SSW | 3 |
| July 27: | | | |
| 6 a. m | 55.17 | E | 1 |
| 2 p. m | 55.87 | SSW | 3 |

| Santo Domingo (Batanes Islands). | | | |
|---|---|---|---|
| Date and hour. | Pressure. | Wind. | |
| | | Direction. | Force. |
| July 21: | *mm.* | | *0–12.* |
| 6 a. m | 755.07 | ESE | 3 |
| 2 p. m | 54.10 | SE | 3 |
| July 22: | | | |
| 6 a. m | 54.23 | Calm | ----- |
| 2 p. m | 52.55 | EtoESE | 3 |
| July 23: | | | |
| 6 a. m | 51.75 | E | 2 |
| 2 p. m | 51.39 | E | 3 |
| July 24: | | | |
| 6 a. m | 51.52 | E | 2 |
| 2 p. m | 50.11 | EbyS | 3 |
| 4 p. m | 49.81 | EbyS | 3 |
| 6 p. m | 50.03 | E | 2 |
| July 25: | | | |
| 6 a. m | 49.22 | SE | 2 |
| 10 a. m | 49.47 | Calm | ----- |
| 4 p. m | 49.89 | SSE | 2 |
| 6 p. m | 50.22 | SSE | 1 |
| July 26: | | | |
| 6 a. m | 51.05 | SSE | 2 |
| 2 p. m | 52.30 | WSW | 3 |
| July 27: | | | |
| 6 a. m | 55.87 | Calm | ----- |
| 2 p. m | 56.82 | NW | 2 |

The track as drawn is likewise corroborated by the observations made on board the steamer *Taisang,* en route from Manila to Amoy, and the steamers *Yuensang* and *Zafiro* which were coming to Manila from Hongkong. On Plate IV are the routes of these vessels and also the winds which they encountered in the China Sea. The barometric minimum on the *Zafiro* was 746 millimeters, observed at 2 and 4 p. m. of the 23d; that on the *Yuensang* 741.7 millimeters, observed during the night of the 24th. The most violent winds experienced by the latter vessel were those from SWbyW, force 12; and such of force 8, coming from west-southwest, as regards the *Zafiro.* The steamer *Tean* likewise met winds of force 9 from SWbyW, with a barometric minimum of 748.5 millimeters, observed at 2 p. m. of the 26th, some twenty hours after she had left Hongkong for Manila. The British steamer *Shimosa* was in about 19° 30′ N and 120° 25′ E from 2 to 8 a. m. of the 25th, when the barometric minimum 745.75 millimeters was observed with a gale blowing from SSE, SbyW and SSW.

The track of this typhoon is abnormal, as few typhoons have been observed which moved first toward northeast or east-northeast, and then recurved toward northwest or west-northwest. Nevertheless, thanks to the observations of our stations on the western coast of Luzon, Manila Observatory was able to announce the movement in its general character, though, of course, with some minor inaccuracies, by means of the following notices cabled to the other meteorological centers in the Far East:

July 21, 6.30 p. m.: Depression in northern part of China Sea.
July 22, 3.55 p. m.: Typhoon west of northern Luzon, more than 100 miles distant, moving northeast.
July 23, 5 p. m.: Typhoon west of Balintang Channel, moving northeast or east-northeast.
July 24, 11.30 a. m.: Typhoon west of Balintang Channel, moving east-northeast.
July 25, 10.45 a. m.: Typhoon west of Balintang Channel, moving east-northeast.
July 25, 7.25 p. m.: Typhoon west of Balintang Channel, moving northeast or east-northeast.
July 26, 11.20 a. m.: Typhoon west of Bashi Channel, moving west-northwest or northwest.

Hongkong Observatory, on its part, sent us the following advices:

July 24, 12.30 p. m.: Typhoon west of Balintang Channel, direction of motion unknown.
July 25, 12.30 p. m.: Typhoon west of Balintang Channel, moving north.

July 26, 12.45 p. m.: Typhoon east-southeast of Hongkong, moving northwest.
July 27, 7.30 a. m.: Typhoon east-southeast of Hongkong, moving west-northwest.
July 27, 12.30 p. m.: Typhoon southwest of Hongkong, moving west-northwest.

The foregoing dispatches show that neither Manila nor Hongkong could announce the fact that the typhoon was recurving toward northwest or west-northwest before the 26th, though even thus the dispatches containing this information were exchanged nearly a full day before the vortex passed very close to the south of Hongkong. After the plan of erecting a wireless telegraph station on the Pratas will have been carried out, it will be easy to give such warnings more in advance.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—Habiendo sido este mes tan abundante en perturbaciones atmosféricas, según veremos luego, no es de extrañar que la media mensual de la presión del aire fuese en todas las estaciones menor que la de Julio del año pasado. Las diferencias fueron más notables en Luzón por haber sido ésta la parte de Filipinas que más de lleno se halló bajo la influencia de dichas perturbaciones. La media de Manila difiere de la normal de este mes en —1.15 mm. Las presiones más altas se observaron generalmente en Filipinas del 3 al 5, y las más bajas el 22 ó 23 en Visayas y Mindanao y el 14 ó 15 en Luzón.

La temperatura media mensual fué en casi todas las estaciones ligeramente menor que la del año pasado. Los valores extremos para Manila fueron 33.3 °C y 21.4 °C, registrados respectivamente los días 8 y 15.

**Precipitación acuosa.**—Á excepción de las estaciones de Mindanao, casi todas las demás nos dan este mes un total de lluvia superior á la de Julio, 1910. En el centro y norte de Luzón las lluvias fueron bastante abundantes desde el 13 ó 14 hasta fin de mes. Son dignas de notarse las siguientes cantidades mensuales para las estaciones de la parte occidental de Luzón: Laoag, 1,083.9 mm.; Vigan, 1,641.5 mm.; Candón, 1,171.6 mm.; San Fernando, Unión, 1,078.7 mm.; Baguio, 3,381.7 mm.; Bolinao, 1,891.4 mm.; Dagupan, 1,300.4 mm.; Iba, 1,832.2 mm. La cantidad de agua recogida en todo el mes en Manila fué 698.5 mm. diferenciándose de la normal de Julio en +302.7 mm. Más abajo, al hablar de los baguios de este mes, daremos algunos detalles más sobre estas lluvias tan extraordinarias del pasado Julio.

## DEPRESIONES Y TIFONES.

Con razón se ha considerado este mes de Julio de este año como uno de los más borrascosos para Filipinas. Hasta siete tifones se observaron en la región comprendida entre las Islas Marianas é Indochina. De ellos tres atravesaron el Archipiélago por el norte de Manila y uno se acercó bastante á la costa occidental de Luzón. Sin embargo, como el último baguio del mes no cruzó nuestro meridiano hasta la mañana del 1.° de Agosto, dejaremos su discusión para el Boletín del mes siguiente. Nos quedan pues seis tifones para discutir en este Boletín. Sus trayectorias pueden verse en las láminas II y III. Juntamente con ellas incluímos las de los tifones y depresiones de Junio, según prometimos en el Boletín del mes pasado, donde hallarán nuestros lectores las discusiones correspondientes á los mismos.

### EL BAGUIO DE 29 DE JUNIO Á 5 DE JULIO, 1911.

Este baguio se formó probablemente del 28 al 29 en el Océano Pacífico al E de la parte central de Filipinas y más cerca de nuestro Archipiélago que de las Islas Marianas. De ahí que no habiéndose notado su influencia ni en Marianas, ni en las Carolinas, no fué posible anunciar su existencia hasta la mañana del día 30, ó sea, algo menos de dos días antes que atravesase la Isla de Luzón. El Observatorio de Manila, después de haber enviado los primeros avisos de prevención á las estaciones más orientales de Filipinas trasmitió á las 10.20 a. m. de dicho día 30 este cablegrama á Tokio, Kikawei, Taihoku, Hongkong y Phulien:

> Día 30, 10.20 a. m.: Tifón al E de las Visayas septentrionales ó de la parte sudeste de Luzón; dirección desconocida.

Por la tarde del mismo día y la mañana del siguiente se pudo ya precisar mejor la posición del baguio con estos avisos de tifón:

> Día 30 de Junio, 4 p. m.: Tifón al E de la parte sur de Luzón, moviéndose al WNW ó NW.
>
> Día 1 de Julio, 8.40 a. m.: Tifón al E de Luzón, distancia menor de 300 millas moviéndose al W ó WNW.

En la nota ordinaria del tiempo dada á las 11.50 a. m. se decía lo siguiente:

El tifón se halla esta mañana al E de Luzón á la distancia de unas 200 millas, moviéndose al W ó WNW.

Según se ve en la trayectoria de este baguio que damos en la lámina III, el vórtice atravesó la Isla de Luzón en dirección al NW¼W durante las primeras horas del día 2. En la misma lámina III reproducimos una copia exacta de la curva barográfica de Echagüe, por ser ésta la estación que se halló más cerca del vórtice.

Á juzgar por las observaciones hechas á bordo del vapor *Loongsang* en viaje de Hongkong á Manila, parece no poder negarse que en la porción de la trayectoria comprendida entre 116° y 120° Long. E el baguio se movió casi directamente al W. El vórtice se halló muy cerca al este del *Loongsang* la madrugada del día 3, cuando se hallaba este barco en los 115° 14′ Long. E y 18° 00′ Lat. N. La mínima barométrica á bordo del *Loongsang* fué 739.6 mm: se observó á 4 a. m. del 3 con vientos del NNW, fuerza 10. Á las 8 a. m. los vientos habían rolado al SW¼S, alcanzando la fuerza 12 de la escala de Beaufort á las 12 mediodía. Desde los alrededores del meridiano 116° se inclinó el baguio otra vez al norte, dirigiéndose casi al NW durante los días 3, 4 y 5. Penetró en China por el sur de Kwong-chau-wan, la tarde del día 4.

Véanse á continuación los avisos de tifón enviados por el Observatorio de Manila los días 2 y 3:

Día 2, 10.20 a. m.: Tifón al W de la parte norte de Luzón, distancia menor de 100 millas, moviéndose al WNW.

Día 3, 10.25 a. m.: Tifón al W del canal de Balintang, moviéndose al WNW ó NW.

En las notas ordinarias del tiempo de los días 3, 4 y 5 decía el Observatorio refiriéndose á la última parte de la trayectoria de este baguio:

Día 3, 11.45 a. m.: El tifón se halla hoy en el Mar de China al W del canal de Balintang, moviéndose aparentemente al NW¼W.

Día 4, 4 p. m.: El tifón se hallaba esta mañana al SW de Hongkong y continúa moviéndose al NW¼W.

Día 5, 11.30 a. m.: El tifón entró ayer en el Continente y se halla esta mañana en la parte sudoeste de China, moviéndose aparentemente hacia el oeste.

El Observatorio de Hongkong nos favoreció con estos cablegramas:

Día 30 (de Junio), 11.15 a. m.: Tifón al SE de Luzón, moviéndose al WNW.
Día 1 (de Julio), 10.45 a. m.: Tifón al E de Luzón, moviéndose al WNW.
Día 2, 11.30 a. m.: Tifón al NW de Luzón, moviéndose al WNW.
Día 3, 11.30 a. m.: Tifón al SSE de Hongkong, moviéndose al WNW.
Día 4, mediodía: Tifón al SW de Hongkong, moviéndose al NW.

Del Observatorio de Zikawei son los siguientes avisos de tifón trasmitidos á las estaciones de la costa de China:

Día 30 (de Junio), 10 a. m.: Tifón lejos al E de Filipinas; dirección desconocida.
Día 30 (de Junio), 9 p. m.: Tifón al E de Luzón, dirección WNW ó W¼NW.
Día 1 (de Julio), 9 p. m.: Tifón en el centro de Luzón, dirección WNW ó W¼NW.
Día 2, 2 p. m.: Tifón al NW de Luzón, dirección NW¼W ó WNW.
Día 2, 9 p. m.: Tifón en el centro de Paracels, dirección NW¼W ó WNW.
Día 3, 9 p. m.: Tifón entre Paracels y Hainán, dirección NW.
Día 4, mediodía: Tifón en el golfo de Tongking, dirección NW.

### EL TIFÓN Ó DEPRESIÓN DE 8 Á 11 DE JULIO, 1911.

Diremos solamente cuatro palabras sobre esta depresión ó tifón, ya que no nos consta llegase á adquirir grande intensidad. Se formó al parecer el día 8 en el Pacífico al E de Luzón y á una distancia menor de 300 millas. Movióse al N hasta llegar al E de Meiacosima, desde donde se dirigió al NW. Según todas las probabilidades se deshizo antes de llegar al Continente, al N de Formosa, la noche del día 11.

El Observatorio de Manila envió estos avisos de tifón referentes á este baguio:

Día 9, 5.30 p. m.: Tifón al NE de Luzón, moviéndose al NNW ó N.
Día 10, 11.50 a. m.: Tifón al SE de Meiacosima, moviéndose al NNW ó N.
Día 11, 10.20 a. m.: Tifón al W de Naha (Islas Liukiu), moviéndose al N.
Día 11, 7.10 p. m.: Tifón al N de Formosa, moviéndose al NW.

### EL BAGUIO DE 11 Á 19 DE JULIO, 1911.

El baguio que atravesó el norte de la Isla de Luzón los días 14 y 15 de Julio fué sin duda el más notable de todo el mes por las grandes pérdidas que causó, especialmente en el centro de Luzón. Pero hay que confesar que estas pérdidas fueron debidas principalmente á las abundantísimas lluvias y consiguientes inundaciones que tuvieron lugar durante el paso del baguio á través de Luzón y los dos días siguientes. Por lo demás la bajada del barómetro y la fuerza de los vientos en las cercanías del vórtice no parecen haber sido nada extraordinarias.

**Trayectoria de este baguio.**—Este baguio se formó, al parecer, el día 11 al NW de Yap, á la mitad de distancia próximamente entre Guam y las Filipinas. Así se deduce con bastante probabilidad de las observaciones de Yap de dicho día 11 comparadas con las de Guam y Filipinas.

El Observatorio de Manila envió los días 11 y 12 estos avisos de tifón á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 11, 3.20 p. m.: Tifón en el Océano Pacífico, á la mitad de camino entre las Islas Marianas y Luzón; dirección desconocida.

Día 12, 5.45 p. m.: Tifón al E de Luzón, distancia mayor de 300 millas, moviéndose al NW.

El día 13 por la mañana pudo ya el Observatorio anunciar que el baguio amenazaba atravesar la parte norte de Luzón. He ahí el aviso de tifón que á este efecto se distribuyó en la Capital:

Día 13, 9 a. m.: El tifón está situado al E de la parte central de Luzón, moviéndose aparentemente al WNW. Probablemente cruzará mañana la parte norte de Luzón.

Á los Centros Meteorológicos del Extremo Oriente se trasmitieron estos cablegramas:

Día 13, 9 a. m.: Tifón al E de Luzón, distancia mayor de 300 millas, moviéndose al WNW.
Día 13, 3.30 p. m.: Tifón al E de Luzón, distancia menor de 300 millas, moviéndose al WNW.

La tarde del mismo día 13 se publicó esta nota en los periódicos de Manila:

Día 13, 3.30 p. m.: Vientos huracanados y tiempo tormentoso prevalecerán mañana en el norte de Luzón; vientos duros con lluvias y chubascos en el centro y sur de Luzón.

Entre tanto durante todo el día se fueron enviando á todas las estaciones del Archipiélago los avisos oportunos para precaverse en lo posible contra la violencia del baguio que amenazaba. Bien se puede decir que fué esta una de las veces en que todo el Archipiélago pudo ser plenamente avisado y con toda anticipación de la existencia y dirección del temporal, debido al hecho de no haberse interrumpido la comunicación telegráfica con el norte de Luzón hasta la noche del día 14.

La tarde de dicho día 14 se dijo á los periódicos de la Capital:

Día 14, 3.30 p. m.: El tifón ha entrado en la Isla de Luzón á 2 p. m. Está cruzando ahora la Provincia de Cagayán y atravesará esta noche la de Ilocos Norte. Continúa moviéndose al WNW.

El mismo día se trasmitieron estos avisos de tifón á los Centros Meteorológicos del Extremo Oriente:

Día 14, 9 a. m.: Tifón al E de la parte norte de Luzón, moviéndose al WNW ó NW.
Día 14, 4.15 p. m.: Tifón cruzando la parte norte de Luzón, moviéndose al WNW.

Fíjense nuestros lectores en la trayectoria de este baguio que damos en la lámina IV y verán por sí mismos cuán poco se diferencia de la supuesta en los avisos de tifón y notas del tiempo que acabamos de mencionar. Durante la noche del 14 al 15 se interrumpió la comunicación telegráfica con todas las estaciones de Luzón al norte de Dagupan. De ahí que fuese imposible anunciar antes del 16 la inclinación que sufrió la trayectoria al norte, cuando se hallaba el vórtice todavía dentro de Luzón entre Aparri y Laoag. En el texto inglés reunimos en una tabla algunas de las observaciones hechas durante el paso del baguio en Tuguegarao, Aparri y Laoag. Por ellas y muy particularmente por las de Laoag comparadas con las de Aparri se echa de ver de un modo bien claro que el tifón, en vez de seguir acercándose á Laoag en su movimiento de traslación al WNW ó NW se desvió notablemente hacia el norte en dirección al canal de Balintang.

Véanse á continuación los avisos de tifón trasmitidos por el Observatorio de Manila los días 15, 16 y 17.

Día 15, 9.20 a. m.: Tifón al W de Aparri, moviéndose al WNW.

Día 16, 9 a. m.: Tifón al W del canal de Bashi, moviéndose al NW ó NNW.

Día 17, 8.45 a. m.: Tifón en, ó cerca de, Formosa, moviéndose al NNE ó NE.

Día 17, 3.15 p. m.: Tifón en la, ó cerca de la, parte norte del canal de Formosa, moviéndose al N ó NNE.

El curso ulterior de este tifón á través del canal de Formosa y en el Continente (lámina III) se ha trazado con la mayor aproximación posible teniendo á la vista el "China Coast Register" del Observatorio de Hongkong, los mapas diarios del Observatorio de Zikawei y las observaciones hechas en la estación del Faro Middle Dog, en la parte norte del canal de Formosa.[1]

**Grandes lluvias é inundaciones en Luzón.**—En una hoja que publicamos el 6 de Septiembre, 1911, hicimos estas observaciones hablando de este baguio de 15 de Julio:

> El hecho más culminante de este baguio fueron las lluvias extraordinarias que ocurrieron desde el 14 al 17 en la parte occidental de la Isla de Luzón, pero muy particularmente en Baguio. En el mapa [lámina IV] verán nuestros lectores representada en milímetros la cantidad total de agua recogida en cada estación durante los cuatro días mencionados. Increible parece que en tan corto período de tiempo cayesen en Baguio 2,238.7 milímetros! ni á la verdad lo hubiéramos acabado de creer si no lo hubiésemos hallado así registrado por el "Cuadruple Register" usado en nuestras estaciones de primera clase. Parte de estos registros pensamos reproducir en nuestro Boletín Mensual, por creer de sumo interés que se tenga completa seguridad en estos datos, toda vez que no nos consta que en ninguna otra parte del mundo se hayan registrado jamás lluvias tan torrenciales como éstas.
>
> La cantidad de agua que acabamos de mencionar para la estación de Baguio fué distribuída en la forma siguiente en los días 14 al 17: día 14, 879.8 milímetros; día 15, 733.6 milímetros; día 16, 424.9 milímetros; día 17, 200.4 milímetros.

Cumpliendo ahora con la promesa que entonces hicimos, reproducimos en la lámina V una copia exacta de las curvas registradas en el Observatorio de Mirador, Baguio, por el "Cuadruple Register" desde mediodía del 14 hasta mediodía del 15 ya que éstas fueron las 24 horas en que cayeron las lluvias más abundantes y torrenciales. Una sola modificación, por cierto bien accidental, se notará en esta copia, si se compara con el verdadero original. Consiste esta modificación en dar por separado todas las curvas de la velocidad del viento y todas las de la lluvia, cuando en el original aparecen los dos elementos intercalados en cada línea. De ahí que lo ancho de todo el registro tal como lo publicamos parece como un tercio mayor que el original. Nos ha parecido necesaria esta modificación para hacer más fácil á nuestros lectores la inteligencia de estos registros.

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[1] Estaban ya preparadas estas notas para la imprenta cuando recibimos de Mr. Kondo, Director del Observatorio de Taihoku, algunos valiosos datos referentes á este baguio, juntamente con la trayectoria del mismo á través de la parte occidental de Formosa y del canal de Formosa. Estos datos llegaron todavía á tiempo para introducir en la lámina III una ligera modificación en esta parte de la trayectoria. Dicha modificación, sin embargo, no se ha podido introducir en la lámina IV por haberse impreso ésta antes como hoja adelantada de este Boletín.

Examinando con cuidado estas curvas, es fácil formarse alguna idea de la fuerza de los vientos y de las lluvias observadas en Baguio del 14 al 15 de Julio. Por lo que toca á las lluvias, son verdaderamente notables los siguientes datos que arrojan estos registros de 24 horas.

| Períodos de máxima lluvia en Baguio. | Milímetros. | Pulgadas. | P. M. del 14. |
|---|---|---|---|
| Cantidad de lluvia desde mediodía del 14 á mediodía del 15 | 1, 168. 1 | 45. 99 | |
| Máximas cantidades de lluvia en una hora | 89. 9<br>91. 4 | 3. 54<br>3. 60 | 4 á 5.<br>3. 50 á 4. 50. |
| Máxima cantidad de lluvia: | | | |
| En 10 minutos | 18. 3 | 0. 72 | 4. 32 á 4. 42. |
| En 5 minutos | 10. 2 | 0. 40 | 4. 32 á 4. 37. |

Frescas están aún en los ánimos de todos las noticias que vinieron publicando por varios días los periódicos de Manila sobre los daños ocasionados por estas lluvias y las inundaciones que las siguieron durante los días 16, 17 y 18. Ante todo merecen citarse los grandes perjuicios causados á la línea férrea de Manila á Naguilian y Campamento No. 1 y al camino de Benguet. En la lámina VI reproducimos algunas fotografías de las inundaciones, tomadas en Dagupan y Lingayén el día 17. Nos fueron remitidas por el Observador de Dagupan D. Domingo Torres. Á continuación copiaremos algunos párrafos de los reports de los Observadores de S. Isidro (Nueva Écija), Dagupan, Vigan, Laoag y Tuguegarao, referentes á estas inundaciones.

*S. Isidro, Nueva Écija.*—Á consecuencia de las lluvias por el norte, el agua del río de este pueblo ha crecido bastante para inundar las partes bajas de esta Cabecera, llegando el agua hasta la cintura en su máxima profundidad.

*Dagupan.*—Desde la madrugada del 16 se inundó esta población, alcanzando la altura del agua en los sitios más bajos, como la Estación Férrea, á 4 pies (1.2 metros), y en los demás sitios de 2 á 3 pies (0.6 á 0.9 metro). Esta inundación duró hasta el 18, en que fué también bastante grande en los pueblos de Binmaley y Lingayén. Tanto es así que dos empleados de la Veterinaria que se marcharon antes de mediodía del 18 de Dagupan para Lingayén, al llegar en la bifurcación entre los caminos de San Carlos y Dagupan de la jurisdicción de Binmaley, fué arrastrado por la fuerza de la corriente el vehículo donde iban, ahogándose el caballo y encontrándose en difícil situación dichos empleados, que por fin se salvaron regresando á esta población á las 5 de la tarde del citado día 18.

Para dar una idea de dicha inundación tengo el gusto de incluir vistas fotográficas tomadas el 17, pues nadie se atrevía á tomarlas el 16 por la imponencia del agua que subía.

*Vigan.*—El destrozo de los caminos se debe á la abundancia de lluvias, pues informan los viejos del Municipio de Narvacán, pueblo situado al S de Vigan, que es la primera vez que han vista una inundación como la que acaban de experimentar.

*Laoag.*—Pasando á los destrozos ocasionados con motivo de este baguio, no me es posible aún comunicarlos á esa Central, puesto que las lluvias tan torrenciales que cayeron han hecho crecer de tal modo los ríos que es imposible por espacio de tres días toda comunicación con los pueblos.

*Tuguegarao.*—No hay desgracia que lamentar, pero en vista de la inundación se ha perdido totalmente el sembrado de maíz y palay por haberse desbordado los ríos Grande y Pinacananan; se esperan días de hambre y de desolación: el arroz en esta comarca ha subido atrozmente el precio.

**Anomalías de este baguio.**—Hemos dicho al principio que "la fuerza de los vientos no fué nada extraordinaria en las cercanías del vórtice." Y á la verdad examinando las observaciones de Tuguegarao, Laoag y Aparri (véase el texto inglés) hallamos que las dos últimas nos dan como máxima fuerza del viento la fuerza 10 y 7 respectivamente de la escala de Beaufort: y aun cuando Tuguegarao nos da fuerza 12°, con todo, sopló muy poco tiempo y causó relativamente pocos destrozos, á juzgar por el report del Observador de aquella estación.

Sin embargo, es cosa digna de llamar la atención que, habiendo sido tan moderada la violencia de los vientos en los alrededores del vórtice, con todo á distancias tan considerables de él como en Manila é Iloílo, por ejemplo, fuese la fuerza de los mismos tan notable que alcanzase el número 8 ó 9 de la escala de Beaufort. De ahí que se hubiesen de lamentar en dichas ciudades algunos daños y perjuicios.

El Observador de Iloílo decía en su report lo siguiente refiriéndose á este baguio:

> El baguio que se sintió desde el día 14, á pesar de no haber bajado el barómetro á 754 mm., ha causado en la población más destrozos que el de Noviembre del año pasado,[1] por la violencia de las rachas de vientos que soplaron durante varios días. Las casas derribadas suman 42 todas de materiales ligeros ó mixtos; algunas de materiales fuertes han sufrido también desperfectos.

Nos contentamos por ahora con mencionar estas anomalías, ya que no nos ha sido posible hasta el presente hallar sobre ellas ninguna explicación satisfactoria.

**Avisos de tifón de los Observatorios de Hongkong y Zikawei.**—Terminaremos la discusión de este baguio copiando los avisos de tifón que sobre él recibimos del Director del Observatorio de Hongkong y los que el Observatorio de Zikawei trasmitió á las estaciones de la costa de China desde el 12 hasta mediodía del 17:

**Hongkong:**

Día 13, mediodía: Tifón al E de Luzón, moviéndose al WNW.
Día 14, 11.30 a. m.: Tifón al NE de Manila, moviéndose al WNW.
Día 14, 4.45 p. m.: Tifón en el N de Luzón, moviéndose al WNW.
Día 15, 11.30 a. m.: Tifón al NW de Luzón, moviéndose al NW.
Día 16, 10 a. m.: Tifón al W del canal de Bashi, moviéndose al NNW.
Día 17, 10.30 a. m.: Tifón en la parte N del canal de Formosa, moviéndose al N.

**Zikawei:**

Día 12, 9 p. m.: Tifón latitud 15° á 20°, longitud 130° á 135°, dirección NW.
Día 13, 4.30 p. m.: Tifón al E de Luzón, dirección NW.
Día 14, 9 p. m.: Tifón en el centro de Luzón, dirección NW.
Día 15, 8.30 a. m.: Tifón al NW de Luzón, dirección NW.
Día 16, mediodía: Tifón al sur de Pescadores, dirección N.
Día 17, 8.30 a. m.: Tifón en el centro del canal de Formosa, dirección N.
Día 17, 11.30 a. m.: Tifón en frente de Ockseu, dirección N.

## DOS TIFONES EN EL PACÍFICO, 15 Á 26 DE JULIO, 1911.

Las observaciones hechas en nuestras estaciones de Yap y Guam durante los días 15 á 21 apenas dan lugar á duda sobre la existencia de dos tifones diferentes originados el uno en las Carolinas Occidentales del 15 al 17 y el otro en las cercanías de las Islas Marianas del 19 al 20.

Nuestros lectores podrán ver dichas observaciones reunidas en una tabla en el texto inglés. El 17 y 18 tanto los vientos de Yap como los de Guam y las lecturas barométricas de ambas estaciones indicaban perfectamente la existencia de un tifón en las Carolinas al E de Yap. El 19 por la madrugada se observó en Yap la mínima barométrica, 748.13 mm., con vientos que fueron rolando del NW al WSW en tanto que en Guam tenía lugar como un nuevo descenso en los barómetros con vientos del SW, siendo así que en los tres días anteriores habían soplado constantemente del ENE. Según estos datos creemos poder afirmar que mientras el tifón de las Carolinas pasaba por el N de Yap en dirección al WNW, se formó otro centro ciclónico cerca de la parte central de las Islas Marianas al N de Guam.

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[1] Nótese que este baguio pasó cerca de Iloílo, pues atravesó casi por el centro la Isla de Panay. Véase el Boletín de Noviembre de 1910.

El tifón de las Carolinas parece haberse deshecho el 20 ó 21 mucho antes de llegar á Filipinas, mientras el otro tifón de las Marianas había ido adquiriendo grande extensión y desarrollo. Dirigióse este último al NW hasta que al llegar al E de las Islas Liukiu recurvó al NE en dirección á la Isla Nippon, la cual atravesó pasando cerca por el W y N de Tokio la noche del 25 al 26.

Damos á continuación los avisos de tifón enviados por el Observatorio de Manila á Tokio, Zikawei, Taihoku, Hongkong y Phulien desde el 17 al 21:

> Día 17, 8.45 a. m.: Tifón en, ó cerca de, las Carolinas Occidentales; dirección desconocida.
>
> Día 18, 7 a. m.: Tifón en, ó cerca de, las Carolinas Occidentales, moviéndose al W ó WNW.
>
> Día 19, 10.45 a. m.: Tifón al N de Yap, moviéndose al WNW.
>
> Día 19, 7 p. m.: Dos tifones: uno al NW de Yap, moviéndose al WNW, y otro en, ó cerca de, la parte norte de las Islas Ladrones ó Marianas, moviéndose al WNW.
>
> Día 20, 8.30 a. m.: Dos tifones: uno al N de las Islas Palaos, moviéndose al WNW, y otro al W de las Islas Ladrones ó Marianas, moviéndose al W.
>
> Día 21, 6.30 p. m.: Dos tifones: uno al E de la parte norte de Luzón, distancia menor de 300 millas, rellenándose, y otro al W de la parte norte de las Islas Ladrones ó Marianas, inclinándose al norte.

Antes de pasar á discutir el baguio sexto de este mes solamente advertiremos aquí que el día 18, sobre todo por la tarde, las observaciones de Luzón parecían indicar otro centro ciclónico algo lejos al E de Luzón, como así lo anunció el Observatorio á las 3.35 p. m. de dicho día. Sin embargo, los telegramas recibidos de nuestras estaciones la mañana siguiente nos obligaron á enviar un nuevo cablegrama anunciando que el supuesto tifón se había deshecho ó estaba deshaciendo al E de Filipinas.

### EL BAGUIO DEL MAR DE CHINA, 20 Á 28 DE JULIO, 1911.

Decíamos acerca de este baguio en la hoja citada más arriba y que publicamos el 6 de Septiembre último:

> Después del paso del baguio del 15 se puede decir que las lluvias apenas cesaron del todo en las provincias del oeste de Luzón hasta después del 26.
>
> Un centro secundario ó área de baja presión se quedó por algunos días sobre los alrededores de Luzón hasta que el 20 se formó un nuevo tifón en el Mar de China que influyó de nuevo con lluvias más ó menos abundantes en la misma parte de Luzón que tanto había sido castigada con las lluvias del baguio anterior. Con esto crecieron más los ríos, especialmente en la parte central de dicha Isla y aumentaron de nuevo las inundaciones.
>
> Este baguio, según se ve en la lámina [IV], se movió primero al ENE acercándose al NW de Luzón hasta que recurvó al WNW cuando se hallaba al W del canal de Balintang.
>
> Lluvia recogida durante los días 20 al 26 de Julio: Laoag, 228.3 milímetros; Vigan, 546.4 milímetros; San Fernando, Unión, 459.6 milímetros; Baguio, 381.2 milímetros; Bolinao, 677.8 milímetros; Dagupan, 357.2 milímetros; Iba, 530.0 milímetros; Tárlac, 299.5 milímetros; Manila, 201.9 milímetros; Santa Cruz, Laguna, 118.2 milímetros; Batangas, 140.4 milímetros.
>
> Mínima barométrica en Laoag, 747.9 milímetros, á $5^h$ $15^m$ a. m. del 25.

En el texto inglés publicamos reunidas en una tabla parte de las observaciones hechas del 20 al 27 en las estaciones de Bolinao, Vigan, Laoag y Santo Domingo, Islas Batanes. Creemos que un examen detenido de estas observaciones bastará á nuestros lectores para confirmarles en la bondad de la trayectoria de este baguio tal como la damos en las láminas III y IV. También servirán para ello las observaciones hechas á bordo de los vapores *Taisang* en viaje de Manila á Amoy, *Yuengsang* y *Zafiro* en viaje de Hongkong á Manila. En la lámina IV incluímos la ruta seguida por estos barcos y los vientos por ellos encontrados en el Mar de China. La mínima barométrica del *Zafiro* fué 746 mm., observada á 2 y 4 de la tarde del 23; y la del *Yuengsang*, 741.7 mm., observada la noche del 24. Los vientos más violentos fueron SW¼W, 12, para el *Yuengsang* y WSW, 8, para el *Zafiro*. También el vapor *Tean* encontró vientos del SW¼W, fuerza 9 con una mínima barométrica de 748.5 mm., observada á 2 p. m. del 26, unas 20 horas después de su salida de Hongkong para Manila. El vapor *Shimosa*, en viaje de

Yokohama á Manila, se hallaba de 2 á 8 a. m. del 25 en 19° 30′ N y 120° 25′ E, cuando se observó la mínima barométrica 745.75 mm. con vientos del SSE, S¼SW y SSW, fuerza 9 y 10.

La trayectoria de este baguio es anormal pues son pocos los tifones que se mueven primero al NE ó ENE para recurvar después al NW ó WNW. Con todo, gracias á las observaciones hechas en nuestras estaciones de la costa occidental de Luzón pudo el Observatorio de Manila anunciarla en sus líneas generales, aunque con alguna inexactitud, como es natural, en algunos detalles, por medio de los siguientes avisos de tifón trasmitidos á los centros meteorológicos del Extremo Oriente:

Día 21, 6.30 p. m.: Depresión en la parte norte del Mar de China.
Día 22, 3.55 p. m.: Tifón al W de la parte norte de Luzón, distancia mayor de 100 millas, moviéndose al NE.
Día 23, 5 p. m.: Tifón al W del canal de Balintang, moviéndose al NE ó ENE.
Día 24, 11.30 a. m.: Tifón al W del canal de Balintang, moviéndose al ENE.
Día 25, 10.45 a. m.: Tifón al W del canal de Balintang, moviéndose al ENE.
Día 25, 7.25 p. m.: Tifón al W del canal de Balintang, moviéndose al NE ó ENE.
Día 26, 11.20 a. m.: Tifón al W del canal de Bashi, moviéndose al WNW ó NW.

El Observatorio de Hongkong nos favoreció con estos cablegramas referentes á este baguio:

Día 24, 12.30 p. m.: Tifón al W del canal de Balintang, dirección desconocida.
Día 25, 12.30 p. m.: Tifón al W del canal de Balintang, moviéndose al N.
Día 26, 12.45 p. m.: Tifón al ESE de Hongkong, moviéndose al NW.
Día 27, 7.30 a. m.: Tifón al ESE de Hongkong, moviéndose al WNW.
Día 27, 12.30 p. m.: Tifón al SW de Hongkong, moviéndose al WNW.

Como se ve no fué posible, ni al Observatorio de Manila ni al de Hongkong, anunciar hasta el 26 la recurva del tifón al NW ó WNW: con todo, fué enviado el aviso de tifón en que se indicaba este cambio de dirección casi un día antes de que pasase el vórtice muy cerca por el sur de Hongkong. Cuando se lleve á cabo el establecimiento de una estación de telegrafía sin hilos en Pratas, será fácil dar estos avisos con más anticipación.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] |  |  | Underground temperature. |  |  |  |  |  | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. | 0.25 meter. |  | 0.50 meter. |  | 1.50 meters. | 2.50 meters. |  |  | Free exposure, total. | Shelter, total. |
|  |  |  |  |  | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. |  |  |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *°C.* | *°C.* | *°C.* | *°C.* | *°C.* | *°C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 752.82 | 26.5 | 30.4 | 24.2 | 29.5 | 29.8 | 30.3 | 30.3 | 29.2 | 28.9 | 87.5 | 22.4 | 0.5 | 2 |
| 2 | 55.23 | 25 | 27.8 | 23.5 | 27.8 | 27.9 | 29.4 | 29.4 | 29.2 | 28.8 | 90.6 | 21.3 | .9 | 1.2 |
| 3 | 58.24 | 27 | 33.2 | 23.8 | 27.8 | 29.4 | 29 | 29.4 | 29.3 | 28.9 | 83.1 | 21.9 | 2.7 | 2.2 |
| 4 | 59.06 | 26.6 | 32.8 | 22.2 | 28.2 | 30.3 | 29.1 | 29.5 | 29.2 | 28.8 | 83.5 | 21.4 | 2.9 | 2 |
| 5 | 59.10 | 26.2 | 31.7 | 22.8 | 28.5 | 29.8 | 29.4 | 29.5 | 29.2 | 28.9 | 86.7 | 21.8 | 1.8 | 1.4 |
| 6 | 58.70 | 26.8 | 32.8 | 22.1 | 28.3 | 30.1 | 29.3 | 29.5 | 29.2 | 28.9 | 81.2 | 21.1 | 2.2 | 2 |
| 7 | 58.44 | 27 | 32.8 | 23.6 | 28.9 | 30.1 | 29.6 | 29.6 | 29.1 | 28.9 | 83.1 | 21.9 | 2 | 1.8 |
| 8 | 58.17 | 27.4 | 33.3 | 22.3 | 29 | 30.9 | 29.6 | 29.8 | 29.1 | 28.9 | 79.6 | 21.4 | 4.3 | 2.9 |
| 9 | 58.28 | 28 | 32.9 | 23.8 | 30 | 31.8 | 30 | 30.2 | 29.1 | 29 | 80.7 | 22.5 | 4.3 | 3.3 |
| 10 | 58 63 | 27.7 | 32.8 | 24.7 | 30 | 31.6 | 30.2 | 30.4 | 29.2 | 29 | 80.4 | 22.1 | 4.5 | 3 |
| 11 | 58.76 | 27.2 | 32.5 | 24.2 | 29.9 | 31.5 | 30.2 | 30.5 | 29 | 29 | 84.7 | 22.5 | 2.4 | 2.4 |
| 12 | 58.48 | 27 | 32.6 | 22.2 | 29.6 | 30.9 | 30 | 30.3 | 29.1 | 29 | 84.2 | 22.2 | 2.4 | 2.2 |
| 13 | 56 | 26.6 | 31.1 | 22.5 | 29.4 | 30.9 | 30.1 | 30.2 | 29.1 | 29 | 86.2 | 22.3 | 1.2 | 2.6 |
| 14 | 52.29 | 25.8 | 27.3 | 23.8 | 28 | 28.2 | 29.5 | 29.6 | 29 | 28.7 | 87.6 | 21.6 | .2 | 2.4 |
| 15 | 52.21 | 25.7 | 28 | 21.4 | 27.2 | 27 | 28.8 | 28.4 | 29 | 28.8 | 90.6 | 22.2 | .8 | 1.9 |
| 16 | 51.27 | 26.9 | 29.7 | 22.4 | 26 | 27 | 27.3 | 27.5 | 29 | 28.8 | 84.9 | 22.3 | 1.3 | 2.9 |
| 17 | 55.79 | 26 | 29.5 | 23 | 26.4 | 27.1 | 27.2 | 27.5 | 29 | 28.8 | 89.3 | 22.2 | .3 | 1.1 |
| 18 | 56.26 | 24.8 | 27.9 | 23.3 | 25.8 | 26.1 | 26.8 | 26.7 | 28.7 | 28.7 | 93 | 21.7 | .2 | .7 |
| 19 | 56.42 | 25.3 | 28.9 | 23.5 | 26.2 | 27 | 26.8 | 27 | 28.7 | 28.8 | 90.4 | 21.6 | 1.3 | 1.3 |
| 20 | 56.32 | 24.5 | 29.7 | 22.3 | 26.7 | 27.3 | 27.2 | 27.4 | 28.7 | 28.9 | 90.5 | 20.6 | .2 | 1.2 |
| 21 | 55.36 | 25.2 | 29.2 | 23 | 26.8 | 27.2 | 27.3 | 27.4 | 28.6 | 29 | 89 | 21.2 | .6 | 1.2 |
| 22 | 54.08 | 25.1 | 29.5 | 23.2 | 26.1 | 26.9 | 26.4 | 27 | 28.5 | 28.7 | 92.1 | 21.7 | .1 | .9 |
| 23 | 53.43 | 25 | 27.6 | 23.2 | 26.4 | 26.4 | 27.1 | 27 | 28.4 | 28.9 | 92.8 | 21.8 | .2 | 1.2 |
| 24 | 52.94 | 26.8 | 29.1 | 24.3 | 26.3 | 26.8 | 26.9 | 27 | 28.2 | 28.9 | 84.7 | 22.2 | 1.6 | 2.6 |
| 25 | 53.06 | 27.8 | 31.7 | 25.8 | 26.8 | 28 | 27.1 | 27.2 | 28.2 | 28.8 | 82.9 | 23 | 2.9 | 2.9 |
| 26 | 54.71 | 27.4 | 31.9 | 24.9 | 27.4 | 28 | 27.2 | 27.5 | 28.2 | 28.8 | 86.9 | 23.6 | 1.4 | 1.6 |
| 27 | 57.19 | 27.4 | 32.2 | 24.4 | 28 | 29.4 | 28 | 28.2 | 28.2 | 28.9 | 85.3 | 23 | 2.9 | 2.1 |
| 28 | 57.76 | 26.7 | 32 | 24.2 | 28.5 | 30 | 28.3 | 29 | 28.3 | 28.9 | 86.8 | 22.5 | 2.2 | 1.9 |
| 29 | 56.98 | 26.1 | 32.1 | 23.4 | 28.8 | 30 | 28.7 | 28.7 | 28.2 | 28.9 | 88.4 | 22.1 | 1.8 | 1.6 |
| 30 | 56.22 | 27 | 31.9 | 23.3 | 28.3 | 29.9 | 28.7 | 28.9 | 28.2 | 28.9 | 84.9 | 22.3 | 2.7 | 2.5 |
| 31 | 55.26 | 26 | 28.4 | 24.7 | 28.3 | 28.3 | 28.8 | 28.8 | 28.2 | 28.8 | 88.9 | 22.2 | .3 | 1.6 |
| Mean | 756.14 | 26.4 | 30.8 | 23.4 | 27.9 | 28.9 | 28.5 | 28.7 | 28.8 | 28.9 | 86.5 | 22 | 1.7 | 2 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  | 53.1 | 60.6 |
| Departure from normal | —1.15 | —0.7 | —0.0 | —0.2 |  |  |  |  |  |  | +1.7 | —0.4 |  |  |

| Date. | Wind. |  |  |  | Clouds. |  |  | Sunshine. | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. |  |  |  |  |
|  |  |  |  |  |  | Upper. | Lower. |  |  |  |
|  |  | *Km.* | *Km.* |  | *0-10.* |  |  | *h. m.* | *mm.* |  |
| 1 | W quad. | 622 | 53 | SWbyW | 10 | Ci.-S. | Cu.-N. NW | 0 00 | 28.4 | d° a. ↙° ● p. |
| 2 | S quad. | 407 | 40 | SSW | 10 | Ci.-S. | N. SW | 0 00 | 33.2 | ● a. p. |
| 3 | S quad. | 247 | 23 | SSW | 7.9 | Ci.-S. | Cu. SSW | 3 05 | 6.4 | ●° a. ☈ ● p. |
| 4 | SE quad. | 88.5 | 9 | SSE | 9.4 | Ci.-S. N | Cu. | 5 00 |  | ○ a. p. |
| 5 | NE quad. | 79.5 | 7.5 | SE | 9.1 | Ci.-S. | Cu. E | 1 50 |  | ☈ d° p. |
| 6 | NW quad. | 114.5 | 15 | NNW | 5.9 | Ci.-S. | Cu. ENE | 7 20 | .5 | d° a. ☈ d p. |
| 7 | NE quad. | 96.5 | 12 | W | 8.2 | Ci.-S. | Cu.-N. E | 3 55 | .8 | ● ☇ p. |
| 8 | SW quad. | 159 | 16 | W | 4.4 | Ci. SE | Cu. E | 9 40 |  | ☈ p. |
| 9 | SW quad. | 305 | 29 | WSW | 3.9 | Ci -S. | Cu. SEbyE | 10 05 |  |  |
| 10 | SW quad. | 439 | 34 | SW | 7.8 | Ci.-S. SSE | Cu. WSW | 7 45 | 10.7 | ● ○² a. |
| 11 | SW quad. | 231 | 24 | SW | 9 | Ci.-S. | Cu. WNW | 5 40 | 4.2 | ○° ☈ ● p. |
| 12 | W quad. | 257 | 25 | SW | 8.2 | Ci.-S. | Cu. WbyN | 4 25 | 37.2 | ● a. p. ○° ☇ p. |
| 13 | W quad. | 442 | 39 | W | 9.5 | Ci., Ci.-S. | Cu. NW | 3 15 | 6.5 | d a. ↙° ● p. |
| 14 | WSW | 1,048 | 68 | WSW | 10 |  | N. W | 0 00 | 25.5 | ↙ ● a. p. |
| 15 | WSW | 1,317 | 65 | WSW | 10 |  | N. WbyS | 0 00 | 117 | ↙ ● a. ↙² ●² p. |
| 16 | SW | 1,026.5 | 55 | SWbyW | 9.9 | Ci.-S. | Fr.-N. WSW | 0 00 | 29.3 | ↙ ● a. p. |
| 17 | SW quad. | 601.5 | 51 | SW | 10 | Ci.-S. | Cu.-N. W | 0 15 | 75.1 | ↙° a. ☈° ↙ p. ● |
| 18 | W quad. | 229 | 42 | WSW | 10 | Ci.-S. | N. | 0 00 | 49.7 | ●² a. ● a. p. |
| 19 | SW quad. | 265 | 24 | WSW | 10 | Ci.-S. | N. SW | 0 00 | 49.8 | ●² a. d° p. |
| 20 | S quad. | 151 | 16.5 | SSW | 9.8 | Ci.-S. | Cu.-N. SW | 1 25 | 28.9 | ● a. p. |
| 21 | SW quad. | 267.5 | 36 | WSW | 9.8 | A.-Cu., Ci.-S. | Cu.-N. SSW | 0 25 | 23 | ↙° p. ● a. p. |
| 22 | SW quad. | 325 | 42 | SW | 10 | Ci.-S. | N. SW | 0 05 | 51.3 | ● a. p. |
| 23 | S quad. | 415.5 | 31.5 | SW | 10 |  | N. SW | 0 00 | 86.3 | ● a. p. ●² ⊤ p. |
| 24 | SW quad. | 573.5 | 36.5 | SW | 10 | Ci.-S. | Fr.-N. SW | 0 00 | 10.1 | ● a. p. |
| 25 | SW | 786.5 | 41.5 | SW | 9.5 | A.-Cu. SSW | Cu.-N. W | 5 10 | 3.1 | ↙° a. ● a. p. |
| 26 | SW quad. | 535.5 | 35 | SW | 8.2 | A.-Cu. WNW | Cu. WSW | 4 45 | 5.3 | ● a. p. |
| 27 | SW quad. | 190.5 | 19 | SW | 5.8 | A.-Cu. SW | Cu. | 8 50 | .5 | d a. ⌒ p. |
| 28 | SW quad. | 139.5 | 16 | S | 8.5 | Ci.-S. | Cu. E | 5 30 | 1.5 | ☈° d ☇ p. |
| 29 | SW quad. | 110 | 13 | WSW | 8 | Ci. | Cu.-N. E | 5 30 |  | ☈ d° p. |
| 30 | SW quad. | 295 | 24 | WSW | 8.8 | Ci.-S. | Cu. WSW | 5 55 | 1 | Ω ○° a. ○ ● p. |
| 31 | SW qnad. | 610 | 35 | WbyS | 10 | Ci.-S. | Cu.-N. W | 0 00 | 13.2 | ● a. p. |
| Mean |  | 399.2 | 31.5 |  | 8.8 |  |  | 3 13 |  |  |
| Total |  |  |  |  |  |  |  | 99 50 | 698.5 |  |
| Departure from normal |  | +124 |  |  | + 1.1 |  |  | —51 24 | +302.7 |  |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.

### TAGBILARAN.

[$\phi = 9°\ 38'$ N ; $\lambda = 123°\ 51'$ E ; barometer above sea, 21.8 meters ; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12 | 0-10. | | | mm. | |
| 1 | 756.70 | ------ | ------ | ------ | ------ | SW quad. | 1.3 | 9.8 | Ci.-S. | Cu. W, SW | ------ | d° a. |
| 2 | 58.72 | ------ | ------ | ------ | ------ | S | 1.7 | 7 | Ci.-S. | Cu. SW, SSW | ------ | d° a. p. |
| 3 | 58.91 | ------ | ------ | ------ | ------ | Variable | .7 | 6 | Ci.-S. | Cu. S, SSW | ------ | ⊕$^{2}$ p |
| 4 | 58.28 | ------ | ------ | ------ | ------ | Variable | 1.2 | 6.8 | Ci. SE | N. SE | 34.5 | ●° d° ↯$^{2}$ p. |
| 5 | 58.43 | ------ | ------ | ------ | ------ | S, SSE | .5 | 7.7 | Ci.-S. | Cu. | 5.1 | ●$^{2}$ a. ↯$^{2}$ a. p. ⊕$^{2}$⊔$^{2}$ |
| 6 | 57.87 | ------ | ------ | ------ | ------ | Variable | .8 | 7.5 | Ci.-S. | Fr.-Cu. E | ------ | |
| 7 | 58.35 | ------ | ------ | ------ | ------ | S, SSE | .3 | 7.3 | Ci.-S. | Cu. WSW | 2 | d° a. ⊔° ⊕° p. |
| 8 | 58.39 | ------ | ------ | ------ | ------ | Variable | 1 | 2.5 | Ci. | Cu. Variable | ------ | ●° a. |
| 9 | 58.54 | ------ | ------ | ------ | ------ | Variable | 1.5 | 1.3 | Ci. | Cu. | ------ | |
| 10 | 58.84? | ------ | ------ | ------ | ------ | SW quad. | 1.3 | 4.3 | Ci., Ci.-S. | Cu. W | ------ | ⊔° p. |
| 11 | 58.80 | ------ | ------ | ------ | ------ | S | 1.7 | 7.7 | Ci.-S. | Cu. NW | ------ | |
| 12 | 58.32 | ------ | ------ | ------ | ------ | SW quad. | 1.8 | 10 | Ci.-S. | Cu. | 2.3 | ●° d° p. |
| 13 | 57.56 | ------ | ------ | ------ | ------ | W quad. | 2 3 | 10 | Ci.-S. | N. NW | 4.1 | ● ↯$^{2}$ p. |
| 14 | 56.89 | ------ | ------ | ------ | ------ | SW quad. | 3 | 8.3 | Ci.-S. | Cu. SW | ------ | |
| 15 | 57.64 | ------ | ------ | ------ | ------ | S | 2.5 | 5.8 | Ci.-S. | Cu. SW | ------ | ↯° p. |
| 16 | 58.07 | ------ | ------ | ------ | ------ | S | 1.8 | 6.3 | Ci.-S. | Cu. SW | ------ | d° p. |
| 17 | 58.04 | ------ | ------ | ------ | ------ | S, W | 1.7 | 2.8 | Ci. NW | Cu. | ------ | |
| 18 | 57.64 | ------ | ------ | ------ | ------ | S, SW | 1.7 | 8 | Ci.-S. | Cu. W | ------ | |
| 19 | 57.56 | ------ | ------ | ------ | ------ | Variable | .8 | 6.8 | Ci.-S. | Cu. SW | ------ | ↯° p. |
| 20 | 57.71 | ------ | ------ | ------ | ------ | SW quad. | 1 | 6.5 | Ci.-S. | Cu. SW | ------ | T° d° p. |
| 21 | 56.64 | ------ | ------ | ------ | ------ | S quad. | .8 | 5.5 | Ci.-S. | Cu. W | ------ | d° ↯° p. |
| 22 | 55.88 | ------ | ------ | ------ | ------ | SW quad. | 1.8 | 5.2 | Ci.-S. | Cu. W | ------ | |
| 23 | 55.81 | ------ | ------ | ------ | ------ | W quad. | 1.7 | 9.3 | Ci -S. | Fr.-Cu. W | ------ | |
| 24 | 56.13 | ------ | ------ | ------ | ------ | SW quad. | 2 | 5 | Ci.-S. | Fr.-N. W | ------ | |
| 25 | 56.22 | ------ | ------ | ------ | ------ | SW, S | 2.2 | 3.7 | Ci., Ci.-S. | Cu. WSW | ------ | |
| 26 | 56.48 | ------ | ------ | ------ | ------ | SSW, S | 1.3 | 2.8 | Ci. | Cu. W, SSW | ------ | |
| 27 | 57.69 | ------ | ------ | ------ | ------ | W quad. | .8 | 7 | Ci.-S. | Cu. W | ------ | ↯° p. |
| 28 | 57.94 | ------ | ------ | ------ | ------ | Calm | 0 | 8 | Ci -S. | Cu. | 21.3 | d° a. ●$^{2}$ p. |
| 29 | 57.24 | ------ | ------ | ------ | ------ | S quad. | 1 | 9.2 | Ci.-S. | Fr.-Cu. W | 26.4 | ●$^{2}$ p. |
| 30 | 57.44 | ------ | ------ | ------ | ------ | W | 1.2 | 8.7 | Ci.-S. | Fr.-N. NW | 2.5 | ●° p. |
| 31 | 56.91 | ------ | ------ | ------ | ------ | SW quad. | 2 | 5 | Ci.-S. | Cu. | ------ | ⊔° p. |
| Mean | 757.60 | ------ | ------ | ------ | ------ | ------------ | 1.4 | 6.5 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 98.2 | |

### SURIGAO.

[$\phi = 9°\ 48'$ N ; $\lambda = 125°\ 29'$ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Upper. | Clouds. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 756.80 | 27.8 | 31.6 | 23.9 | 79.2 | S quad. | 1.3 | 9.5 | Ci.-S. NE | Cu.-N. SW | 4.6 | ● p. |
| 2 | 58.99 | 26.4 | 31.4 | 22.9 | 87.3 | S quad. | .8 | 8 | Ci.-S. NE | Cu.-N. SW | ------ | Ω$^{2}$ p. |
| 3 | 59.14 | 26.6 | 31.7 | 22.9 | 87.4 | E quad. | 1 | 6.5 | Ci.-S. | Cu. S | 15.2 | Ω$^{2}$ a. p. |
| 4 | 58.55 | 26.6 | 29.2 | 23.7 | 89.8 | Variable | .5 | 9.5 | Ci.-S. | Cu.-N. N | 6.8 | ● a. p. |
| 5 | 58.28 | 26.4 | 30.2 | 23.3 | 89.3 | Variable | .7 | 6.7 | Ci.-S. E | Cu.-N. S | 9.4 | ● a. Ω$^{2}$ p. |
| 6 | 58 | 25.9 | 30.2 | 23.2 | 89.5 | NE quad. | .8 | 7.2 | Ci.-S. E | Cu.-N. | 11.9 | Ω$^{2}$ a. p. ● p. |
| 7 | 58.29 | 26.8 | 31.1 | 23.3 | 88.3 | Variable | .7 | 6.8 | A.-Cu. SSE | Cu.-N. SE | 1.8 | Ω$^{2}$ a. ●° p. |
| 8 | 58.38 | 27.3 | 31.6 | 23.7 | 84.8 | SW quad. | 1 | 6.5 | Ci.-S. E | Cu.-N. SW | 13.7 | Ω$^{2}$ ↯ ● a. Ω° p. |
| 9 | 58.40 | 27 | 31.4 | 23.5 | 84.2 | W quad. | .8 | 6 | A.-Cu. NW | Cu.-N. SW | 2 | Ω$^{2}$ ●° a. Ω° p. |
| 10 | 58.42 | 28.4 | 31.5 | 25.3 | 80.2 | SW quad. | 2.2 | 7.5 | Ci.-S. E | Cu.-N. SW | ------ | Ω° a. |
| 11 | 58.05 | 28 | 29.9 | 25.3 | 77.8 | SW | 4 | 9.5 | Ci.-S. E | Cu.-N. SW | 2.3 | |
| 12 | 57.20 | 26.5 | 27.9 | 24.2 | 87.5 | W quad. | 4.8 | 10 | ------------ | Fr.-N. W | 6.6 | ⌈↯$^{2}$ ●° a. ↙° p. |
| 13 | 55.84 | 26.8 | 28.1 | 23.9 | 75.8 | SW | 6.7 | 10 | ------------ | Fr.-N. SW | 1.8 | ↙° ●° a. ↙ p. |
| 14 | 56.28 | 29 | 31.9 | 26.6 | 61.7 | SW quad. | 4.8 | 9.3 | A.-Cu. W | Cu. SW | ------ | ↙ a. ↯° p. |
| 15 | 57.30 | 29.5 | 32.5 | 27.7 | 67 | SW quad. | 2 | 6.3 | Ci. E | Cu. SW | ------ | ↯° p. |
| 16 | 57.48 | 28.5 | 32.4 | 23.5 | 69.8 | SW quad. | 1.3 | 7 | Ci.-S., A.-Cu. E | Cu.-N., Cu. SW | ------ | ∞ Ω p. |
| 17 | 57.67 | 28.6 | 33.2 | 24.4 | 71 | S quad. | 1 | 7 | A.-Cu. E | Cu. W | ------ | Ω° a. ↯$^{2}$ p. |
| 18 | 56.72 | 28.1 | 31 | 24.2 | 72.8 | SW | 4.2 | 7.7 | A.-Cu. E | Cu.-N., Cu. W | ------ | Ω° a. ↙° p. |
| 19 | 56.88 | 27.8 | 31.8 | 24.8 | 77.5 | SW | 2.2 | 9.7 | A.-Cu. E | Cu. N. W | 1.3 | d° p. |
| 20 | 57.23 | 28 | 32.1 | 24.6 | 78.5 | W quad. | 1.5 | 7.3 | A.-Cu. NW | Cu., Cu.-N. SW | 6.6 | ●° p. |
| 21 | 56.37 | 28.2 | 32.5 | 24.2 | 75.9 | SW | 1.8 | 7.3 | A.-Cu. NW | Cu. WSW | ------ | ↯$^{2}$ a. |
| 22 | 55.48 | 28.7 | 33.2 | 24.3 | 71.5 | SW quad. | 1.7 | 7.3 | A.-Cu. NE | Cu. SW | ------ | Ω° a. |
| 23 | 55.57 | 28.8 | 31.7 | 25.8 | 72.8 | SW quad. | 2 | 9.3 | A -Cu. NE | Cu.-N. | ------ | ↯ p. |
| 24 | 56 | 29.5 | 33.7 | 25.7 | 69.8 | SW | 2.2 | 6.7 | A.-Cu. E | Cu.-N. SW | ------ | ∞ p. |
| 25 | 55.84 | 29.4 | 33.3 | 25.9 | 73.3 | SW quad. | 1.8 | 4.5 | A.-Cu. E | Cu. SW | ------ | |
| 26 | 56.17 | 29.2 | 33.7 | 25.4 | 69.3 | SW quad. | 1.3 | 5.2 | A.-Cu. E | Cu. SW | ------ | ↯$^{2}$ p. |
| 27 | 57.48 | 27.6 | 29.7 | 25.4 | 83.3 | WSW | 1.2 | 8.5 | Ci.-S. | Cu.-N. SW | 69.1 | ↯$^{2}$ a. p. |
| 28 | 57.77 | 25.2 | 27.7 | 23.4 | 92 | SW quad. | .8 | 9.8 | Ci.-S. E | Cu.-N. | 58.9 | ●$^{2}$ a. ● ↯$^{2}$ p. |
| 29 | 56.88 | 24.7 | 27.6 | 22.9 | 91.5 | W quad. | 1 | 9.8 | Ci.-S. | N., Cu.-N. | 5 | ●$^{2}$ d° a. ●° p. |
| 30 | 56.80 | 26.8 | 29.1 | 25.2 | 81.9 | SW | 2.7 | 6 | Ci.-S. E | Fr.-N., Cu.-N. SW | ------ | |
| 31 | 56.69 | 27.7 | 32.1 | 24.5 | 77.5 | SW quad. | 1.7 | 6.7 | A.-Cu. SE | Cu.-N. SW | ------ | Ω° p. |
| Mean | 757.26 | 27.6 | 31.1 | 24.4 | 79.3 | ------------ | 2 | 7.7 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 217 | |

All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### CEBU.

[φ=10° 18′ N; λ=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 756.46 | 26.1 | 28.9 | 23.8 | 81.5 | SW, W | 8 | 9.7 | Ci.-S. | N. WSW | ------ | ≡° Ω d a. |
| 2 | 58.77 | 27.5 | 30.9 | 24.3 | 77.3 | SW | 7.8 | 6.7 | Ci.-S., A.-Cu. | Cu.-N., Cu. SSW | ------ | ≡° Ω a. ⌈↯ p. |
| 3 | 58.96 | 27.6 | 32.6 | 23.6 | 75.3 | SE | 5.2 | 4.7 | Ci. | Cu. SW | 1.3 | Ω a. ⌈↯ p. |
| 4 | 58.45 | 27.3 | 31.6 | 24 | 79.3 | Variable | ---------- | 6.7 | Ci.-S. | Cu. NE | 24.6 | ●° a. ⌈↯ a. p. |
| 5 | 58.39 | 26.8 | 30.5 | 23 | 78.7 | Variable | 6.3 | 7.2 | Ci.-S. | Cu. NE | ------ | ● a. ⍦ p. ⌈↯ a. p. |
| 6 | 57.99 | 26.8 | 31.6 | 23 | 80 | Variable | 5.8 | 4.3 | Ci. | Cu. NE | 19.3 | ●° a. ⌈↯ a. p. ● p. |
| 7 | 58.34 | 26.5 | 31.5 | 23.5 | 82.3 | S quad. | 5.9 | 5.7 | Ci. | Cu. ENE | 9.8 | Ω a. ● ⌈↯ a. p. |
| 8 | 58.43 | 27 | 31.3 | 23.5 | 79.7 | SW quad. | ---------- | 4.3 | Ci., A.-Cu. | Cu. SW | ------ | Ω a. ↯ a. p. ⌈↯ p. |
| 9 | 58.35 | 27 | 31.5 | 23.1 | 75.5 | SW quad. | ---------- | 3 | A.-Cu. NE | Cu. SW, SSW | ------ | Ω a. |
| 10 | 58.61 | 27.9 | 32 | 24 | 71.8 | SW quad. | ---------- | 4.5 | Ci., Ci.-S. | Cu. SW | ------ | Ω a. ⍦ p. |
| 11 | 58.40 | 27.8 | 31.4 | 25.5 | 72.3 | SW quad. | 9.6 | 7.2 | Ci.-S. | Cu. SW | ------ | Ω ⏀ a. ⌈↯ ↯ p. |
| 12 | 57.86 | 27 | 29.2 | 25.2 | 75.3 | SW, W | 8 | 9 | Ci.-S. | Cu.-N. W | 1.3 | Ω ⌈↯ a ●° p. |
| 13 | 56.52 | 25.3 | 27 | 24 | 81.2 | SW | 12.6 | 9.3 | ------------------ | Cu.-N. WSW | 1.6 | ●° a. d a. p. |
| 14 | 55.85 | 28.5 | 32.5 | 24.2 | 64.8 | SW | 16.2 | 6.5 | Ci.-S. | Cu. SWquad. | ------ | ⍦ a. ○ a. p. |
| 15 | 56.90 | 28.3 | 31.6 | 25.8 | 72.2 | SW | 15.9 | 5.3 | Ci., Ci.-S. | Cu. SW, WSW | ------ | ⏀ a. ○ p. |
| 16 | 57.64 | 27.2 | 31.9 | 23.6 | 77 | SW | ---------- | 6.7 | Ci.-S. | Cu. SW | 1.8 | ≡° Ω a. ●° p. |
| 17 | 57.64 | 27.8 | 30.6 | 25 | 75.2 | SW quad. | ---------- | 5.7 | Ci. | Cu. WSW, SW | ------ | ⌒ ●° a. ↯ p. |
| 18 | 57.16 | 27.3 | 30.8 | 24.2 | 74.7 | SW quad. | ---------- | 6.3 | Variable | Cu. W | .8 | Ω a. ●° ⌈↯ p. |
| 19 | 57.18 | 27.2 | 31.5 | 24.4 | 73.8 | SW quad. | ---------- | 6.8 | Ci.-S. | Cu. SW | 1 | Ω ⏀ ⊕ a. p. |
| 20 | 57.37 | 27.8 | 31.8 | 25.5 | 71.2 | SW quad. | ---------- | 7 | Ci., Ci.-S. | Cu. SW, WNW | ------ | ≡ Ω a. ⌈↯ p. |
| 21 | 56.41 | 27.3 | 30.8 | 22.8 | 73.3 | SW quad. | ---------- | 6.5 | A.-Cu., Ci.-S. | Cu. W | 13.5 | Ω ⏀ a. ● ↙ ⌈↯ p. |
| 22 | 55.49 | 27.3 | 31 | 24 | 78.7 | SW quad. | ---------- | 6.2 | Ci., Ci.-S. | Cu. W, SW | 3.6 | ≡° Ω a ● ⌈↯ p. |
| 23 | 55.70 | 27 | 30.4 | 24.7 | 79.5 | SW quad. | 10.5 | 8.2 | Ci.-S. | Cu.-N. W, SW | 1.5 | ●° a. p. |
| 24 | 55.90 | 27.8 | 30.4 | 24.9 | 77.2 | SW quad. | 10.7 | 6.7 | A.-Cu. | Cu. WSW | 2.8 | ≡° Ω ⏀ ●° a. ↯ p. |
| 25 | 55.87 | 28.1 | 31.4 | 25.5 | 71 | SW quad. | 11.6 | 5.3 | A.-Cu. W | Cu. SW | .8 | Ω a. ●° ↯ p. |
| 26 | 56.13 | 28.5 | 31.9 | 25.4 | 71.5 | SW | 8.1 | 5 | A.-Cu. W | Cu. SW | ------ | ≡° Ω a. ∞ ↯ p. |
| 27 | 57.41 | 27.8 | 31.4 | 25.5 | 77.3 | SW quad. | 6.2 | 7.5 | Ci.-S. | Cu., Cu.-N. W | 3 | ○ a. ↯ a. p. ●° p. |
| 28 | 57.87 | 26 | 28.2 | 24 | 88 | Calm | 3.2 | 9 | ------------------ | Cu -N. NW | 35.9 | ≡° ●° a. ⊤ ●² p. |
| 29 | 56.96 | 25.7 | 29 | 23.8 | 87.7 | Variable | 5.8 | 8.5 | Ci.-S. | Cu.-N. NW | 1.3 | Ω d a. ● ⌈↯ p. |
| 30 | 56.89 | 26.4 | 30.4 | 24.5 | 79.5 | SW quad. | 9.4 | 8.2 | Ci.-S. | Cu.-N. W | ------ | Ω a. d ⌈↯ p. |
| 31 | 56.55 | 27.6 | 30.8 | 25.2 | 74.2 | SW quad. | 12.8 | 6.8 | Ci.-S. | Cu. SW | ------ | Ω a. |
| Mean | 757.30 | 27.2 | 30.9 | 24.3 | 76.7 | ------------ | 9 | 6.6 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 123.9 | |

### ILOILO.

[φ=10° 42′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 756.32 | 24.6 | 26.6 | 23 | 90.3 | SW | 17.2 | 10 | Ci.-S. | Cu.-N. | 69.1 | ●² a. ● p. |
| 2 | 58.53 | 25.6 | 28.9 | 22.9 | 87.8 | SW | 12.4 | 9.5 | Ci.-S. | Cu. SW | 6.9 | ● a. |
| 3 | 58.84 | 27.5 | 32.5 | 23.4 | 78.2 | W | 4.1 | 7 | Ci. | Cu. SW | ------ | d p. |
| 4 | 58.66 | 27.6 | 32.6 | 24.2 | 76.5 | NNE | 6.2 | 8.2 | Ci. | Cu. | 19.8 | ↯ p. |
| 5 | 58.81 | 26 | 29.6 | 23.1 | 83.2 | NE quad. | 9.1 | 9 | Ci.-S. | Cu. | 2.5 | ● a. ↯ ⏀ p. |
| 6 | 58.11 | 26.9 | 31.2 | 23.3 | 80.3 | NE quad. | 8.4 | 5.8 | A.-Cu. E | Cu. NE | ------ | ↯ ⍦ p. |
| 7 | 58.28 | 27.1 | 32 | 24.1 | 81.8 | Variable | 8.1 | 6.8 | Ci. | Cu. | 4.8 | ↯ a. p. ⊤ ⌈↯ ● p. |
| 8 | 58.63 | 26.4 | 29.5 | 23.7 | 86 | SW | 8.7 | 7.7 | Ci. | Cu. | .8 | ⏀ p. |
| 9 | 58.60 | 27.3 | 30.1 | 24.2 | 78.8 | SW | 12.1 | 5.2 | Ci. | Cu. SW | ------ | ● a. |
| 10 | 58.82 | 28.2 | 30.7 | 26.4 | 77.3 | SW | 17 | 8.5 | Ci. | Cu. | ------ | |
| 11 | 58.88 | 27.4 | 30.2 | 24.4 | 77.5 | SW | 16 | 8.2 | Ci. | Cu. SW | ------ | ⊤ d p. |
| 12 | 58.50 | 26.5 | 29 | 23 | 77.7 | SW, W | 14.1 | 9.3 | Ci.-S. | Cu. | 15.2 | ● d p. |
| 13 | 57.16 | 25.1 | 27.5 | 22.4 | 82.8 | SW | 17.9 | 10 | Ci.-S. | Cu. | 14 | ● a. ●° d ↙° p. |
| 14 | 56 | 26.5 | 29 | 21.6 | 78.5 | SW | 28.6 | 10 | Ci.-S | Cu.-N. SW | 32.8 | ↙ ● a. p. |
| 15 | 56.59 | 28.4 | 29.7 | 23.4 | 78.8 | SW | 34.5 | 9.3 | Ci.-S. | Cu. SW | 12.2 | ● ↙ a. p. ↯ p. |
| 16 | 57.28 | 27.2 | 28.8 | 23.2 | 83.2 | SW | 27.7 | 9.3 | Ci.-S. | Cu.-N. SW | 24.6 | ● a. p. ⊤ ↯ p. |
| 17 | 57.57 | 26.8 | 29.3 | 22.8 | 83.2 | SW | 19.6 | 8.8 | Ci.-S., Ci. | Cu.-N. SW | 33.9 | ● a. p. ⊤ p. |
| 18 | 57.56 | 26.3 | 28.8 | 24.2 | 80 | SW | 18.5 | 9.2 | Ci. | Cu. SW | 1.3 | ⌒ ● a. |
| 19 | 57.36 | 25.9 | 28.6 | 23.8 | 81.2 | SW | 13.3 | 10 | Ci.-S. | Cu. SW | .5 | ● ⊤ a. ↯ p. |
| 20 | 57.48 | 26.6 | 29.4 | 22.8 | 80 | SW | 11.6 | 9 | A.-Cu. SW | Cu.-N. SW | 26.9 | ⊤ ⌈↯ ● p. |
| 21 | 56.65 | 25.9 | 29.2 | 23.4 | 87.3 | SW | 13.6 | 9.5 | Ci., Ci.-S. | Cu. W | 46.5 | ↯ ⊤ a. ● a. p. ⌈↯ |
| 22 | 55.49 | 27 | 29.1 | 23.4 | 87 | SW | 19.3 | 9.7 | Ci.-S. | Cu.-N. SW | 49.2 | ● a. p ⌈↯ ⊤ ↯ p. |
| 23 | 55.47 | 26.6 | 28.7 | 23.6 | 85.3 | SW | 24 4 | 10 | Ci.-S. | Cu. SW | 133.6 | ↙° ⌈↯ ●² p. |
| 24 | 55.83 | 25.8 | 28.4 | 21 | 90.2 | SW | 21.8 | 10 | Ci.-S. | Cu.-N. SW | 130.9 | ⊤ ●: a. ⌈↯ a. p. ● |
| 25 | 55.92 | 27.2 | 29.2 | 23.8 | 83 | SW | 28.1 | 9.3 | Ci. | Cu. SW | 4.8 | ↯ a. p. ↙° ● p. |
| 26 | 56.32 | 26.8 | 29 | 23.1 | 86.5 | SW | 16.3 | 9.3 | Ci. | Cu. SW | 54.2 | d a ● a p. ↯ p. |
| 27 | 57.74 | 26.7 | 29.6 | 23.4 | 87.5 | SW | 13.4 | 9.2 | Ci.-S. E | Cu. NW | .8 | ○ a. ⊤ ● p. |
| 28 | 57.88 | 26.4 | 30 | 24.6 | 85.5 | SW | 6.7 | 8.2 | Ci.-S. | Cu.-N. N | .3 | ● d a. ⊤ ●° p. |
| 29 | 57.10 | 25.7 | 30.2 | 23.9 | 88.5 | SW | 7.4 | 9.3 | Ci.-S. | Cu. | 22.3 | Ω ≡ a. d. ● p. |
| 30 | 57.14 | 26 | 27.8 | 23.8 | 84 | SW | 21.6 | 8.8 | Ci.-S. | Cu. SW | 1 | d a. p. ● p. |
| 31 | 56.90 | 25.2 | 27.8 | 23 | 90.7 | SW | 19.8 | 10 | Ci.-S. | Cu.-N. SW | 49.6 | ● a. p. |
| Mean | 757.43 | 26.6 | 29.5 | 23.4 | 83.2 | ------------ | [a]16 | 8.8 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------------ | ------------------ | 758.5 | |

[a] These observations of the wind velocities do not seem to be reliable owing probably to a defect in the instrument.

## METEOROLOGICAL DATA, ETC.—Continued.

### ORMOC.

[φ=11° 00′ N; λ=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, −1.83 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 756.65 | 26.6 | 28.7 | 24.4 | 82.8 | S quad. | 17.9 | 10 | Ci.-S. | Cu.-N. SW | 5.8 | d a. ● p. |
| 2 | 59.03 | 26 | 29.5 | 23.4 | 86.3 | Variable | 9.2 | 9 | Ci.-S. | Cu.-N. S, SE | 2 | p a. |
| 3 | 59.19 | 25.4 | 30.9 | 22.5 | 90.2 | N quad. | 5.3 | 6.3 | Ci.-S. E | Cu.-N. E | ------ | Ω° ≡° p ⊤ ψ° ↯ |
| 4 | 58.67 | 25.2 | 30.4 | 22.9 | 88.3 | N | 5.6 | 6.5 | Ci.-S. | Cu -N. | 5.1 | Ω° a. d ⊤ ↯ p. |
| 5 | 58.46 | 25.6 | 30 | 22.4 | 86.5 | N quad. | 4.4 | 9 | Ci.-S. | Cu.-N. | ------ | Ω° ≡° ○ a. ↯ ⊕ p. |
| 6 | 58.08 | 26.4 | 30.9 | 21.9 | 85.7 | N | 5.7 | 5.3 | Ci. S | Cu., Cu.-N. E | ------ | Ω° ≡° a. ⊤ ↯ p. |
| 7 | 58.44 | 25.6 | 30 | 21.9 | 87.5 | N quad. | 5.3 | 6.5 | A.-Cu. E | Cu.-N. E | 27.5 | ≡° Ω° p ⌒² ↯ ● |
| 8 | 58.71 | 26.3 | 30.2 | 22.9 | 84.3 | N, S | 5.9 | 7.5 | A.-Cu. E, N | Cu. | ------ | ≡° Γ a. ↯ p. |
| 9 | 58.50 | 26.7 | 31.8 | 22.2 | 83.5 | N, S | 6.2 | 4 | Ci. | Cu. W | ------ | Ω° ≡° a. |
| 10 | 58.76 | 26.5 | 31.2 | 22.7 | 81.2 | N, SE | 5.3 | 6.7 | Ci.-S. E | Cu.-N. | ------ | Ω° ≡° a. ⊕′ p. |
| 11 | 58.52 | 26.4 | 31.6 | 22.5 | 81.8 | NW quad. | 5.5 | 8 | Ci.-S. E | Cu.-N. W | 64.3 | ≡° ○ a. ● ⊤ ↯ p. |
| 12 | 58.18 | 24.1 | 26.6 | 22.5 | 96 | N | 4 5 | 10 | Ci.-S. | N. W | 40.8 | ●² a. ● p. |
| 13 | 56.10 | 25.8 | 27.4 | 23.2 | 83.8 | SW quad. | 18.4 | 10 | Ci.-S. | N. W | 1.3 | d a. p. |
| 14 | 55.96 | 27.2 | 30 | 21.9 | 77.7 | SW quad. | 28.4 | 10 | Ci.-S. | Cu.-N. SW | 5.3 | Γ ↙° ⊕ ●° p. |
| 15 | 57.02 | 28.4 | 30.6 | 26.5 | 75.7 | S quad. | 30.2 | 7.7 | Ci.-S. | Cu.-N. SW | ------ | |
| 16 | 57.78 | 28.3 | 29.8 | 27.2 | 72 | S, SW | 24.1 | 7.5 | Ci.-S. | Cu.-N. W | .3 | ○° a. p° p. |
| 17 | 57.75 | 28.1 | 30.5 | 25.6 | 79 | S quad. | 14 | 8.2 | Ci.-S. | Cu. W | 1 | p ⊤ ↯ p. |
| 18 | 57.30 | 26.6 | 30.3 | 22.6 | 82.3 | Variable | 6.9 | 9.7 | Ci.-S. | Cu.-N. W | 12.4 | p° a. Γ ● p. |
| 19 | 57.36 | 26.5 | 31 | 22.7 | 83.2 | E quad. | 6.2 | 9 | A.-Cu. NW | Cu.-N. W | ------ | ≡° a. |
| 20 | 57.48 | 26.7 | 31 | 22.8 | 83.2 | SE | 7.1 | 7.8 | A.-Cu. W by N | Cu., Cu.-N. W | 25.1 | ≡° a. Γ ●² p. |
| 21 | 56.73 | 25.2 | 29.8 | 22.5 | 89.5 | N | 6 | 8.2 | A.-Cu. W | Cu., Cu.-N. W | 19.5 | ≡ a. Γ ●² ↯ p. |
| 22 | 55.71 | 26.6 | 30.2 | 22.4 | 85 | Variable | 7.5 | 9.2 | A.-Cu. W | Cu.-N. W, WSW | 2.3 | ≡ a. p p. |
| 23 | 55.55 | 27.2 | 28.8 | 24.7 | 79.8 | S quad. | 15.1 | 10 | Ci.-S. | Cu.-N. W quad. | 2.8 | d ↯ p. |
| 24 | 56.21 | 27.8 | 29.5 | 25 | 81.3 | S | 19.3 | 10 | Ci.-S. | Cu.-N. SW | 1 | Γ d a. ↯ p. |
| 25 | 56.03 | 28.3 | 31.2 | 27 | 79 | S quad. | 18.2 | 7.7 | Ci. | Cu., Cu.-N. SW | ------ | ○° ↯ p. |
| 26 | 56.33 | 28 | 31.2 | 25.2 | 81 | S quad. | 12.4 | 6 | Ci. | Cu.-N. W | ------ | ↯ p. |
| 27 | 57.74 | 27 | 31.1 | 24 | 84.2 | S | 4.2 | 6.8 | A.-Cu. NE quad. | Cu.-N. | 30 | ⊤ ↯ p. |
| 28 | 57.95 | 24.8 | 26.7 | 22.6 | 92.7 | NW quad. | 5.7 | 9.7 | Ci.-S. | Cu.-N. | 25.4 | ↯ Γ ≡ ● a. d p. |
| 29 | 57.05 | 24.8 | 26.7 | 22.5 | 92.7 | NW quad. | -------- | 10 | Ci.-S. | Cu.-N. W quad. | 48.8 | ≡ a. d a. p. ● p. |
| 30 | 57.02 | 25.8 | 29 | 22.4 | 85.3 | N, SSW | 8.6 | 9.5 | Ci.-S. | Cu.-N. W | ------ | d ● ≡ a |
| 31 | 56.70 | 27.5 | 30.1 | 25.5 | 80 | S quad. | 16.4 | 8.5 | Ci.-S. | Cu.-N. WSW | .5 | Γ d° ⊕ ψ° p. |
| Mean | 757.45 | 26.5 | 29.9 | 23.5 | 83.9 | ------------ | 11 | 8.2 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 321.2 | |

### TACLOBAN.

[φ=11° 15′ N; λ=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, −1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 756.96 | 25 | 27.4 | 22.8 | 92.7 | S quad. | 0.2 | 10 | ------------ | N. SW, WSW | 13.1 | d ● a. p. |
| 2 | 59.45 | 25.8 | 30.8 | 23.4 | 86.7 | SSE | .3 | 8.3 | Ci., A.-S. | Cu.-N. S, SW | 13 | ○² a. ● p. |
| 3 | 59.82 | 26.2 | 31.5 | 23.5 | 90 | SSE | .3 | 6.7 | Ci. NNE | Cu.-N. SSE | 1.5 | ≡ a. ● d ⊤ ⊕² p. |
| 4 | 59.29 | 26.6 | 31 | 23.6 | 88.5 | NW quad. | .5 | 7.8 | Ci.-S., Ci. NNE, E by N | Cu.-N., Cu. SW | 8.1 | ○² a. ● a. p. |
| 5 | 59.10 | 26.4 | 31.4 | 24.3 | 87.2 | WNW | 1.2 | 8 | A.-S., Ci. | Cu.-N. SW | ------ | ○² a. p. ψ² p. |
| 6 | 58.66 | 27.7 | 33.9 | 24.2 | 84.3 | SE quad. | 1.2 | 5.5 | Ci.-S. S | Cu. NE | ------ | |
| 7 | 58.88 | 27.8 | 34 | 24 | 81.9 | Variable | .5 | 5.3 | Ci.-S. N | Cu. S | 6.3 | Ω² a. ● ⊤ p. |
| 8 | 58.98 | 25.9 | 32.8 | 23.9 | 90.3 | NW quad. | .7 | 8.5 | Ci.-Cu. NW | Cu. ESE | 16 | Γ ● d ⌒ ψ² p. |
| 9 | 58.47 | 28.1 | 33.5 | 24.4 | 79.8 | NW, WNW | 1.2 | 5.2 | Ci.-S. E | Cu. W | ------ | ψ² a. |
| 10 | 58.45 | 27.8 | 32.4 | 23.8 | 77 | NW quad. | 1.2 | 7.7 | Ci. E | Cu. SW | ------ | ψ² p. |
| 11 | 58.02 | 28.1 | 31.4 | 25 | 74.3 | NW | 1.8 | 8.5 | Ci.-S. E | Cu. WSW | 38.1 | ψ² a. ●° ↯ p. |
| 12 | 57.59 | 24 6 | 25.6 | 22.6 | 88.2 | NW quad. | 1.8 | 10 | ------------ | N. NW quad. | 68.8 | ●² ↙° ⊤ a. ● p. |
| 13 | 54.90 | 25.4 | 27.1 | 22.3 | 78.2 | W quad. | 2.8 | 10 | Ci. | N. NW quad. | 2.5 | ↙° a. ● a. p. |
| 14 | 55.29 | 27.8 | 32 | 22.6 | 67.2 | WSW | 2.5 | 8.8 | Ci. E | Cu.-N. W | 17.3 | ↙° a. d ● ↙ p. |
| 15 | 56.71 | 28.2 | 33.4 | 22.4 | 70 | SW quad. | 1 | 7.5 | Ci. E | Cu. SW | ------ | ○° a. p. |
| 16 | 57.43 | 26.7 | 32.7 | 23.9 | 76.5 | W quad. | .8 | 8.3 | Ci. E | N. WNW | .8 | ⊕² a. ● ↙° p. |
| 17 | 57.36 | 27.8 | 33.6 | 23 | 76.2 | NNW | .5 | 7.3 | Ci. | Cu. W | ------ | ψ² a. |
| 18 | 56.86 | 27.3 | 32.3 | 24.3 | 77.2 | NW | 2 | 8.3 | Ci. ENE | Cu.-N. WNW | ------ | ○° a. p. ↙° p. |
| 19 | 56.87 | 27.8 | 32.6 | 24 | 78.3 | NW quad. | 1 | 8.7 | Ci., Ci.-Cu. SE | Cu.-N., Cu. NW | ------ | ○° a. p. d p. |
| 20 | 57.05 | 27.5 | 31.8 | 23.9 | 83.5 | E, SSE | .5 | 7.8 | Ci.-Cu., Ci.-S. SE | Cu. W | ------ | |
| 21 | 56.48 | 26.2 | 32.3 | 23 | 84.5 | WNW | 1 | 8.3 | Ci.-Cu. SE | Cu. W | 11.4 | ● ↙° p. |
| 22 | 55.30 | 27 | 32.8 | 23 | 82.7 | W, N | .2 | 7.7 | Variable | Cu.-N. NW | ------ | ↯ p. |
| 23 | 55.18 | 27.8 | 31.6 | 24.8 | 73.8 | WSW | .8 | 8.3 | Ci. SE | Cu.-N., Cu. W | 3 | ○² a. ● p. |
| 24 | 55.51 | 28.1 | 31.9 | 24.8 | 71.7 | SW quad. | 1.2 | 9.2 | Ci. | Cu.-N. WSW | 1.3 | ● a. |
| 25 | 55.44 | 29.3 | 33 | 25 | 65.3 | SW quad. | 1.3 | 6.7 | Ci. ENE | Cu. WSW | ------ | Ω² a. ○² a. p. |
| 26 | 55.80 | 29 | 34 | 25.3 | 71.2 | SW, WSW | .5 | 6.7 | Ci. ENE | Cu. WSW | ------ | ○° a. ○² p. |
| 27 | 57.59 | 28.1 | 31.1 | 25.3 | 81.3 | SE | -------- | 8.5 | Ci. ENE | Cu. WSW | 3 | ○² a. p. |
| 28 | 57.78 | 25.7 | 28 | 23.3 | 88.3 | NW quad. | 1.2 | 9.5 | ------------ | Cu.-N., N. NW | 23.1 | ●² a. |
| 29 | 56.76 | 26 | 28.2 | 24.3 | 85.8 | NW | 1.2 | 9.3 | Ci. | Cu.-N. NW quad. | ------ | ○² a. p. |
| 30 | 56.54 | 26.5 | 29.3 | 24.4 | 81.7 | WNW | 1.5 | 8.5 | Ci.-S. E | Cu.-N. WNW | .8 | ● p. |
| 31 | 56.27 | 26.8 | 31 | 23.5 | 79 | W quad. | .7 | 6.8 | Ci. E | Cu. WSW | 2.5 | ⌒² a. ○² a. p. ● p. |
| Mean | 757.25 | 27.1 | 31.4 | 23.8 | 80.4 | ------------ | 1 | 8 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 230.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAPIZ.

[$\phi$=11° 35′ N ; $\lambda$=122° 45′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.81 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  |  |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | Upper. |  | Lower. |  |  |  |  |
|  | mm. | °C. | °C. | °C. | Per ct. |  | Km. p. h. | 0–10. |  |  |  |  |  | mm. |  |
| 1 | 755.95 | 24.1 | 27.5 | 22.6 | 92.5 | SW | 8.2 | 10 | Ci.-S. |  | N. | SW |  | 4.3 | ●° a. p. |
| 2 | 58.27 | 25.9 | 29.7 | 23.7 | 86.8 | S | 9.3 | 9.7 | Ci.-S. |  | N. | S |  | 11.9 | T° a. ● a. p. |
| 3 | 59.17 | 26.7 | 33.8 | 22.9 | 84.8 | SE | 6.1 | 8.2 | Ci. | NE | Cu., N. | SE |  | ------ | ●° ⊕ ◯ a. |
| 4 | 58.80 | 27.5 | 33.2 | 23.3 | 83.8 | N quad. | 4.1 | 6.7 | Ci. | NE | N. | NW |  | 28.2 | ⚡ ϖ p. |
| 5 | 58.98 | 26 | 31.9 | 23.4 | 90 | N, NW | 4.6 | 9.3 | Ci.-S. |  | N. | NW, NE |  | 8.9 | ● ⛈ a. ⚡ ●° p. |
| 6 | 58.49 | 26.2 | 32 | 24 | 90.2 | N quad. | 3.2 | 8.3 | Ci. | NE | N. | NE |  | 42.4 | ● a. p. ϖ ⛈ ⚡ p. |
| 7 | 58.51 | 27.4 | 33.2 | 24.2 | 86.3 | N quad. | 4.3 | 8.2 | Ci. |  | Cu. | NE |  | ------ | ● ⛈ a. T° ⌒ ϖ ⚡ |
| 8 | 58.59 | 26.2 | 33.9 | 23.7 | 89.5 | S quad. | 3.8 | 7.3 | Ci., Ci.-S. |  | N. | S, W |  | 52.4 | ●² ⛈ ϖ ⚡ p. |
| 9 | 58.57 | 26.5 | 33.4 | 22.8 | 85.3 | S quad. | 4.3 | 4.8 | Ci. |  | Cu. | SW |  | ------ | ●° a. ⛈ d° p. |
| 10 | 58.63 | 27.2 | 34.2 | 24.3 | 81.5 | Variable | 4.8 | 7.5 | Ci. |  | Cu. | W |  | ------ | T ϖ² p. |
| 11 | 58 52 | 27.4 | 34.2 | 23.7 | 81.7 | Variable | 4.6 | 7.8 | Ci. |  | Cu. |  |  | ------ | ⊕° ◯° a. ϖ ψ p. |
| 12 | 58.24 | 25.8 | 31 2 | 24.1 | 86.8 | S quad. | 4.3 | 10 | Ci.-S. |  | N. |  |  | 10.5 | ●° ⛈ ⚡ p. |
| 13 | 56.37 | 25 | 28.4 | 23.7 | 85.8 | W | 10.5 | 10 | Ci.-S. |  | N. | W |  | 2.1 | ●° a. p. |
| 14 | 54.99 | 25 | 30.7 | 23 | 84 | S quad. | 8.3 | 10 | Ci.-S. |  | N. | SW |  | 3.9 | ●° a. d° p. |
| 15 | 55 48 | 28.2 | 34.1 | 24.3 | 70.8 | S quad. | 12.8 | 8.7 | Ci., Ci.-S. |  | Cu. | SW |  | ------ | ⊕° ◯° a. p. d° ⚡ p. |
| 16 | 56.71 | 26.9 | 33.2 | 23.7 | 80 | S quad. | 8 | 7.8 | Ci.-S. |  | N. | SW |  | 4.1 | ●° a. ⚡ p. |
| 17 | 56.99 | 28 | 35.7 | 24.4 | 80.8 | S quad. | 7.2 | 8.2 | Ci. |  | Cu. | SW |  | 3.8 | ⛈ ● ⚡ p. |
| 18 | 56.80 | 26.6 | 33.8 | 23.1 | 80.8 | S quad. | 7 | 7.5 | Ci. |  | N. | SW |  | .3 | ⊕° ◯° ●° ⚡ p |
| 19 | 57.04 | 26.8 | 33.9 | 23.4 | 83.2 | SSE | 3.3 | 8.8 | Ci.-S. |  | N. | SW |  | 29.7 | ⊕° ◯° a. ● ⛈ ⚡ p. |
| 20 | 57.46 | 25.9 | 33.8 | 23.1 | 87 | Variable | 4.8 | 8.7 | Ci.-S. | SW, NW | N. | SW |  | 1.8 | ●° a. p. |
| 21 | 56.38 | 25.8 | 32.8 | 23.4 | 85.8 | S quad. | 4.8 | 8.8 | Ci.-S. |  | N. | SW |  | .3 | ⚡ d p. |
| 22 | 54.91 | 27.6 | 33.8 | 23.5 | 79.8 | SW | 4.6 | 9.5 | Ci.-S. |  | N. | SW |  | 4.8 | d° ⚡ p. |
| 23 | 54.68 | 27.2 | 33.3 | 23.7 | 82 | S quad. | 7.5 | 9.8 | Ci.-S. |  | Fr.-N. | SW, SE |  | 8.2 | ●° T° a. p. ⚡ p. |
| 24 | 54.97 | 27.2 | 32.2 | 23.5 | 81.2 | S | 10.5 | 8.8 | Ci.-S. |  | N. | SW |  | .5 | ●° ⊕° ◯° a. ⚡ p. |
| 25 | 55.01 | 27 8 | 34.8 | 24.9 | 79.7 | SSW | 11.7 | 8 | Ci.-S. |  | N. | SW |  | ------ | ⚡ p. |
| 26 | 55.61 | 28 | 31.2 | 24.1 | 80 | SW quad. | 6 | 7 | A.-Cu. | S | N. | SW |  | .3 | ●° ⚡ p. |
| 27 | 57.51 | 28 | 34.7 | 24 | 80.8 | S quad. | 5 | 5.7 | Ci. |  | Cu. | SW, N |  | ------ | T° ⚡ d° p. |
| 28 | 57.94 | 26.2 | 28.5 | 24.4 | 93.7 | SE, SW | 2 | 8 | Ci.-S. |  | N. |  |  | 2.8 | d° a ●° p. |
| 29 | 57.13 | 26.1 | 31 | 23.7 | 89.7 | SW, SE | 3.6 | 9.3 | Ci.-S. |  | Cu. | NW |  | ------ | ●° Ω° a. d° p. |
| 30 | 56.99 | 26.2 | 32.3 | 23.9 | 86 | S quad. | 4.5 | 9.5 | Ci.-S. |  | N. | W, SW |  | ------ | d° a. T° p. |
| 31 | 56.33 | 26.4 | 31.3 | 23.8 | 84.5 | S | 5.9 | 8.3 | Ci.-S. |  | N. | SW |  | 1 | ⊕° ◯° a. d° ψ° p. |
| Mean | 757.10 | 26.6 | 32.6 | 23.7 | 84.3 | ------------ | 6.1 | 8.4 | ------------ |  | ------------ |  |  | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ |  | ------------ |  |  | 222.2 |  |

### CALBAYOG.

[$\phi$=12° 04′ N ; $\lambda$=124° 36′ E ; barometer above sea, 5.5 meters ; gravity correction not a pplied, —1.80 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | mm. | °C. | °C. | °C. | Per ct. |  | Km. p. h. | 0–10. |  |  |  |  | mm. |  |
| 1 | 755.60 | 26 | 27.9 | 24.3 | 85.3 | S quad. | 35.3 | 9.8 | Ci.-S. |  | N.,S.-Cu. | SW,SSW | 5.6 | ↙° ● a. p° p. |
| 2 | 58.54 | 26.6 | 32.2 | 24 | 85.7 | SE | 8.5 | 7.8 | Ci. | NE | S.-Cu. | SE | 4.6 | p² d ↙° p. |
| 3 | 59.26 | 26 | 31.5 | 22.6 | 89.2 | Variable | 6.3 | 5.3 | Ci. |  | S.-Cu. |  | 2 | Ω a. T d° ϖ p. |
| 4 | 58 86 | 25.8 | 31.4 | 22.9 | 89.5 | S | 5.1 | 7.3 | Ci.-S. |  | S.-Cu. | NE | .5 | T d° ψ p. |
| 5 | 58.69 | 25.4 | 30 | 22.3 | 90.8 | Calm | 3.6 | 8.2 | Ci.-S. |  | S.-Cu. | NE | 7.7 | ● ψ ⚡ p. |
| 6 | 58.20 | 26.9 | 32.2 | 23.2 | 86.7 | Variable | 5.5 | 5.3 | Ci.-S. |  | S.-Cu. | NE | 33 | ⌒ ● T ϖ ⚡ p. |
| 7 | 58.28 | 26.4 | 31.9 | 22.4 | 85 | Variable | 6.4 | 4.2 | Ci. |  | S.-Cu. | ENE | ------ | ⚡ a. ϖ p. |
| 8 | 58.32 | 26.8 | 32.8 | 23.2 | 85 | Variable | 5.8 | 4.2 | Ci. |  | Cu. | SW | ------ | ⚡ ψ ϖ p. |
| 9 | 58.34 | 27.4 | 33.2 | 22.7 | 83.7 | WSW | 7.8 | 3.8 | Ci. | ENE | Cu. | WSW | ------ | ϖ p. |
| 10 | 58.53 | 28.4 | 32.8 | 25.1 | 82 | W | 9.7 | 7.3 | Ci.-S. |  | S.-Cu. | W | ------ | d a. ψ p. |
| 11 | 58.13 | 27.3 | 31.5 | 24.6 | 85.5 | W | 8.6 | 8.5 | A.-Cu. |  | S.-Cu. | W | 1 | ⛈ ⚡ d° p. |
| 12 | 57.64 | 24.9 | 26.6 | 23.8 | 93.7 | WNW | 6.8 | 10 | Ci.-S., A.-Cu. |  | N. | WNW | 91.5 | d° a. p. ● p. |
| 13 | 54.38 | 25.1 | 26.9 | 23.6 | 91.8 | WSW | 29.7 | 10 | A.-Cu. |  | N. | W | 37 | ●² a. ● p. |
| 14 | 54.57 | 26.5 | 28.9 | 23.9 | 81.8 | SW | 39.7 | 9.8 | A.-Cu. |  | S.-Cu. | SW | 8.9 | ● a. p. p² ↙° p. |
| 15 | 55.84 | 28.3 | 30.2 | 26.7 | 73.8 | SSW | 37.5 | 8.2 | Ci.-S. |  | S.-Cu. | SW | ------ | ∞ p. |
| 16 | 56.96 | 27.8 | 30.1 | 24.1 | 77.3 | SSW | 22.7 | 8 | Ci.-S. |  | S -Cu. | SW | 1.8 | p ↙° a. |
| 17 | 57.29 | 28.5 | 31.1 | 24.8 | 78.2 | SSW. SW | 19.1 | 6.2 | A.-Cu. | NW | S.-Cu. |  | ------ | ⚡ p. |
| 18 | 56.74 | 27.6 | 31.9 | 24.9 | 80.2 | WSW, W | 15.4 | 8.5 | Ci.-S. |  | S.-Cu. | W | ------ | ⚡ p. |
| 19 | 57 | 27.8 | 32.4 | 24.5 | 79.7 | W | 13.4 | 8.3 | Ci.-S. |  | S.-Cu. | W | ------ | ⊕² a. |
| 20 | 57.13 | 27.5 | 32.5 | 24.4 | 81.2 | W quad. | 10 | 7.7 | A.-Cu. | NW | S.-Cu. | W | 1.8 | p° ⚡ p. |
| 21 | 56.34 | 27.5 | 32 | 25.5 | 80.2 | W qnad. | 11.8 | 6.7 | A.-Cu. | NW | S.-Cu. | WSW | 2.3 | p° p. |
| 22 | 55.25 | 27.6 | 30.3 | 25.9 | 81.2 | SW | 15.1 | 8.5 | A.-Cu. | NW | S.-Cu. | WSW | 8.9 | p° p. |
| 23 | 54.93 | 27.7 | 29.6 | 26.4 | 80.7 | SSW | 23.9 | 9.3 | A.-Cu. |  | S.-Cu. | SW | 19.8 |  |
| 24 | 55.30 | 27.2 | 29.2 | 24.5 | 82.3 | SSW, SW | 25.2 | 9.2 | A.-Cu. |  | S.-Cu. | SW | ------ | ● T a. |
| 25 | 55.14 | 28.7 | 31 | 27.2 | 75.5 | SW | 27.1 | 5.7 | A.-Cu | S | S.-Cu. | SW | ------ | ⊕ p. |
| 26 | 55.95 | 28.8 | 32.6 | 25.9 | 76.8 | SW | 13.4 | 6.2 | A.-Cu. | SSW | S.-Cu. | SW | ------ |  |
| 27 | 57.47 | 28 | 32.2 | 25 | 81.3 | SW | 6.9 | 7.7 | A.-Cu. | NE | S.-Cu. | WSW | 2 | ⌒ p. |
| 28 | 57.72 | 26 | 28.9 | 24.4 | 91.7 | WSW, NW | 5.3 | 9.3 | Ci.-S. |  | N. | N, NW | 12.7 | ⚡ d T ● a. d° p. |
| 29 | 56.72 | 25.2 | 27.4 | 23.7 | 92.8 | WNW | 3.5 | 9.2 | Ci.-S. |  | Fr.-N. | NNW | 16.2 | d a. p. |
| 30 | 56.35 | 25.9 | 28 | 24.1 | 91 | WSW | 16.5 | 10 | Ci.-S. |  | N. | W | 5.8 | p d° a. ●° a. p. |
| 31 | 55.96 | 27.4 | 30 | 25.8 | 80.7 | SW | 26.1 | 8.3 | Ci.-S., A.-Cu. |  | S.-Cu. | SW | ------ | ϖ p. |
| Mean | 756.95 | 27 | 30.6 | 24.4 | 83.9 | ------------ | 15.2 | 7.7 | ------------ |  | ------------ |  | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ |  | ------------ |  | 263.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### LEGASPI.

[$\phi=13°\ 09'$ N; $\lambda=123°\ 45'$ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 753.19 | 24.3 | 24.8 | 22.2 | 91.7 | SW | 24.3 | 10 | Ci.-S. | Fr.-N. SW | 52.6 | ●² a. ● p. |
| 2 | 57.72 | 27 | 31.1 | 23.9 | 80.3 | SW quad. | 9.1 | 9 | Ci.-S. | Cu.-N. SW | 3.8 | ● a. |
| 3 | 59.18 | 27.9 | 33.8 | 23 | 82 | ENE | 5.7 | 4.2 | Ci. | Cu. SW | ------ | ↯° p. |
| 4 | 58.92 | 28.3 | 34.1 | 23.9 | 81.3 | ENE | 4.3 | 7 | Ci. N | Cu. | ------ | ↯ p. |
| 5 | 58.76 | 26.9 | 32.1 | 23.6 | 84.8 | NE quad. | ------ | 9.2 | Ci.-S. | Cu. NE | 2.6 | ● a. |
| 6 | 58.30 | 28 | 34.1 | 22.5 | 81.2 | E quad. | 7.5 | 5.2 | Ci.-S. | Cu. NE, E | .3 | d a. ↯ p. |
| 7 | 58.39 | 28.6 | 35.7 | 23.2 | 79.8 | NE | 4.9 | 2.5 | Ci.,Ci.-S. | Cu. E | .3 | d° a. ↯° p. |
| 8 | 58.22 | 27 | 35.5 | 22.8 | 84.7 | ENE, NE | 4.1 | 3.3 | Ci.,Ci.-S. | Cu.-N. SW | 1 | ● p. |
| 9 | 58.13 | 27.5 | 33 | 23 | 79.8 | W | 10.2 | 1.3 | Ci. | Cu. WSW | 26.9 | ↯° p. |
| 10 | 58.30 | 27.5 | 33 | 22 | 83.2 | SW quad. | 10.9 | 6.2 | Ci.-S. | Cu.-N. W | 17.3 | ●² a. ⌣ p. |
| 11 | 58.03 | 27.1 | 31.9 | 23 | 84.7 | SW quad. | 13.5 | 9 | Ci.-S. | Cu. W | ------ | ● a. ↯ d p. |
| 12 | 57.49 | 25.8 | 29.8 | 23.2 | 86.5 | W | 6.9 | 10 | Ci.-S. | Cu. W | 51.8 | ⌣ a. ● p. |
| 13 | 53.28 | 24.4 | 25.2 | 22.6 | 92.7 | W quad. | 26.8 | 10 | Ci.-S. | Fr.-N. W quad. | 129.8 | ●² a. p. |
| 14 | 51.91 | 26.3 | 27.9 | 22.7 | 82 | WSW, SW | 35.3 | 10 | Ci.-S. | Fr.-N WSW | 3.1 | ● ↙° a. p. |
| 15 | 54.30 | 27 | 30.2 | 23.6 | 77.5 | SW | 23.6 | 10 | Ci.-S. | Fr.-N. SW | 3.1 | ● a. ↙° p. |
| 16 | 55.20 | 27.7 | 30.6 | 24.1 | 79.2 | SW | 23.2 | 7.2 | Ci.-S. | Cu. SW | 1.1 | ●° a. |
| 17 | 56.28 | 27.7 | 31.2 | 24.2 | 80.5 | WSW | 15.2 | 6.7 | Ci.-S. | Cu.-N. WSW | 1.3 | d a. ●° ↯ p. |
| 18 | 56.06 | 27 | 31 | 23.6 | 82.5 | W, WSW | 16.2 | 6.3 | Ci.-S. | Cu. WSW | ------ | ↯° p. |
| 19 | 56.44 | 26.8 | 31.5 | 24 | 82.5 | WSW | 13.5 | 9 | Ci.-S. | Cu. WSW | .5 | ●° ↯° p. |
| 20 | 56.72 | 27 | 31.6 | 23.3 | 78.5 | WSW | 10.5 | 6.5 | Ci.-S. | Cu. SW | 1.5 | ● p |
| 21 | 55.77 | 26.9 | 31 | 23.4 | 81.8 | W quad. | 12.3 | 6.8 | A.-Cu. | Cu. WSW | .8 | d a. ●° p. |
| 22 | 54.58 | 26.7 | 30.6 | 23.9 | 86.2 | SW | 9.9 | 8.8 | A.-Cu. SW | Fr.-N. WSW | 2.4 | ●° a. ↯ d p. |
| 23 | 54.19 | 26.5 | 28.9 | 24.5 | 87.5 | SW | 13.5 | 10 | Ci.-S. | Fr.-N. WSW | 3.3 | ●° a. p. ↯° p. |
| 24 | 54.20 | 27 | 29.4 | 24 | 82.2 | SW | 18 | 10 | Ci.-S. | Fr.-N. WSW | .3 | ●° a. ↯ p. |
| 25 | 54.15 | 28.1 | 32.4 | 24.8 | 79.5 | SW | 19.3 | 5.2 | Ci.-S.,A.-Cu. | Cu. SW | ------ | d a. ↯ p. |
| 26 | 55.25 | 28.2 | 31.6 | 25.2 | 79.2 | SW | 14.7 | 3.2 | A.-Cu. SW | Cu. WSW | ------ | ↯° p. |
| 27 | 57.24 | 28 | 33 | 24.6 | 83 | SW, WSW | 9.3 | 4.8 | Ci.,Ci.-S. | Cu. WSW | 1.5 | ↯ p. |
| 28 | 57.70 | 27.1 | 33.3 | 23.9 | 86.7 | Variable | 4.9 | 7.2 | A.-Cu. NE | Cu. ENE | ------ | ●° a. ↯ p. |
| 29 | 56.52 | 25.9 | 27.9 | 23.1 | 90.7 | WSW | 4 | 8 | Ci.-S. | Cu. ENE | ------ | |
| 30 | 55.93 | 26.3 | 28.5 | 24 | 86.8 | WSW | 11.8 | 8.8 | Ci.-S. | Cu. W | 2 | d° a. p. |
| 31 | 55.25 | 26.4 | 29 | 23.7 | 86 | SW | 14.5 | 10 | Ci.-S. | Fr.-N. WSW | 3.8 | ●° a. p. |
| Mean | 756.31 | 27 | 31.1 | 23.5 | 83.4 | ------ | .13.3 | 7.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 311.1 | |

### ATIMONAN.

[$\phi=14°\ 00'$ N; $\lambda=121°\ 55'$ E; barometer above sea, 4 meters; gravity correction not applied, —1.74 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 752.44 | 25.2 | 26.6 | 23.3 | 90.2 | SW | 20.1 | 10 | Ci.-S. | N. SW, WSW | 90.7 | ●² a. p. ↙° p. |
| 2 | 55.84 | 26.8 | 29.5 | 25 | 79.2 | S quad. | 19 | 10 | Ci.-S. | S.-Cu. SW, quad. | .5 | d° a. p. |
| 3 | 58.43 | 28.2 | 32.4 | 25 | 76 | S quad. | 9.9 | 8.3 | Ci. NW | S.-Cu. S, SSW | ------ | ◯² a. p. ↯ p. |
| 4 | 58.94 | 26.3 | 32.2 | 22.8 | 84.5 | SW | 7.3 | 9.7 | Ci. N | S.-Cu. S | 21.1 | ◯² a. ⌈↯° ●² Φ² p. |
| 5 | 58.89 | 26.1 | 27.6 | 22.6 | 87.8 | N | 12.2 | 9.5 | Ci. N | S.-Cu. N | 37.9 | Ω² d a. ⌈↯° Φ° p. |
| 6 | 58.47 | 26.6 | 30 | 22.2 | 86 | Variable | 13 | 8.2 | Ci. SE | N.,S.-Cu. NE | 14 | ⌈↯° ⌒° ●² Φ° ⌣² ↯° |
| 7 | 58.53 | 28.1 | 31 | 24.5 | 82.9 | NE | 11.4 | 7.2 | Ci. | Cu. NE | 2 | ◯° a. ●° Φ² ↯° p. |
| 8 | 58.16 | 26.8 | 31.2 | 23 | 85.8 | SW | 9.9 | 4.5 | Ci. | Cu. SE | 3.1 | ≡ ⌒° ●° ⌈↯° ↯° Φ° |
| 9 | 58 | 27.3 | 33.2 | 23 | 82.2 | SW | 10.3 | 2 | Ci. ENE | Cu. SW | ------ | ↯° Φ° p. |
| 10 | 58.05 | 27.2 | 32.4 | 22.4 | 82.5 | SW | 8.8 | 8.2 | Ci. | Cu. SW | 2.3 | Φ² ↯° ≡° ◯² ⌈↯° ●° |
| 11 | 58.16 | 27.2 | 32.3 | 22.5 | 81.5 | SW | 6.5 | 9.3 | Ci. E | Cu. SW | 1 | ◯° a. ●° ↯ Φ° ⌣° p. |
| 12 | 57.81 | 27.3 | 32.7 | 22.2 | 79.4 | SW | 11 | 9.5 | A.-Cu. E, SE | Cu. SW | 13.7 | ◯° a. ↯° ⌈↯° ●° p. |
| 13 | 55.15 | 26 | 29.6 | 22.1 | 82.3 | SW | 18.9 | 9.7 | A.-Cu. ENE | S. NW | 41.7 | ● a. p. |
| 14 | 51.43 | 25 | 27 | 22.3 | 86.2 | SW | 37.9 | 10 | Ci.-S. | N. SW, quad. | 18.6 | ↙° ●° a. p. |
| 15 | 52 43 | 26.4 | 28 | 22.4 | 75.8 | SW | 28 | 10 | Ci.-S. | S.-Cu. SW | 9.1 | ↙° ●° a. d° p. |
| 16 | 54.16 | 27.6 | 31 | 23 | 73. | SW | 20.4 | 10 | Ci.-S. | S.-Cu. SW | 2.3 | ●° ↙° a. |
| 17 | 55.61 | 27.8 | 31.7 | 24.3 | 70.3 | SW quad. | 16.8 | 9.2 | Ci.-S. | S. SW | .5 | ⌣° d° a. ↯ p. |
| 18 | 55.53 | 27.3 | 31.2 | 24.1 | 73.3 | SW | 17.8 | 9.8 | A.-Cu. NW | S.-Cu. SW, quad | ------ | |
| 19 | 56.09 | 27.4 | 31.6 | 24 | 72.5 | SW | 12.6 | 9.8 | A.-Cu. S | S.-Cu. W | ------ | ↯° p. |
| 20 | 56.10 | 27 | 32.4 | 22.9? | 75 | SW quad. | 8.5 | 5 | A.-Cu. SW, W | Cu.,S. S, WSW | ------ | Φ° a. d° ↯° p. |
| 21 | 55.30 | 26.6 | 31.3 | 22.4 | 78.5 | SW | 8.9 | 8.3 | Ci.-S. | S.-Cu. SW, WSW | ------ | Φ° a. d° p. |
| 22 | 54.11 | 26.2 | 30.1 | 23.8 | 83.7 | SW quad. | ------ | 9.2 | Ci.-S. | S.-Cu. SW | 19.5 | d° a. ●° p. |
| 23 | 53.59 | 25.6 | 26.5 | 23.3 | 87.8 | S, SW | 9.2 | 10 | Ci.-S. | N. SW | 9 | ●° a. p. |
| 24 | 53.21 | 26.5 | 27.7 | 23.8 | 84.5 | S | 10 | 9.7 | Ci.-S. | S.-Cu. SW | 11.7 | ● a. ⌈↯ ●° p. |
| 25 | 53.17 | 27.8 | 31.5 | 24.9 | 79 | SW quad. | 11 | 8.8 | A.-Cu. SW | S.-Cu. SW | 6.4 | d° a. ●° p. |
| 26 | 54.47 | 28.4 | 33.8 | 24.8 | 76.8 | SW | 10.8 | 6.8 | A.-Cu. SW | S.-Cu. W | 1.8 | ⌈↯° d² ↯ p. |
| 27 | 56.88 | 27.7 | 33.3 | 24.5 | 80.7 | SW | 6.8 | 7.7 | A.-Cu. SW | S.-Cu. SW, W | 1 | ●° a. ⌒² a. p. ↯° p. |
| 28 | 57.49 | 27.6 | 33 | 23.7 | 84 | SW | 6.9 | 7.8 | A.-Cu. E, ESE | Cu. SW | ------ | d° ↯° p. |
| 29 | 56.64 | 27 | 31.6 | 22.5 | 84.3 | SW | 7.5 | 5.8 | Ci.-S. E | Cu. N | ------ | |
| 30 | 56 | 26.6 | 32 | 22.4 | 84.5 | SW | 11.9 | 8.8 | A.-Cu· ENE | Cu. W | .8 | d² ⌈↯° p. |
| 31 | 54.65 | 26.6 | 29.4 | 23.5 | 80.8 | SW | 10.9 | 10 | Ci.-S. | S.-C. SW | .5 | d p. |
| Mean | 755.93 | 26.9 | 30.8 | 23.3 | 81 | ------ | 13.1 | 8.5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 309.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. |  | Lower. |  |  |  |
|  | mm. | °C. | °C. | °C. | Per ct. |  | Km. p. h. | 0-10. |  |  |  |  | mm. |  |
| 1 | 751.26 | 24.7 | 26 | 23.9 | 93.8 | SW | 20.3 | 10 | ------ |  | N. | SW | 308.9 | ●² ⊤ a. p. |
| 2 | 56.29 | 25.6 | 29.3 | 24.3 | 84.5 | SW | 8.6 | 10 | Ci.-S. |  | S.-Cu. | S | 3.8 | ●° a. p. |
| 3 | 58.57 | 27.5 | 34 | 23.6 | 86.2 | SSW, E | 4.7 | 8.3 | Ci.-S. |  | Cu. | S quad. | 22.9 | Ω² a. ● ⊤ ϟ p. |
| 4 | 59.12 | 27.7 | 32.3 | 23.5 | 85.8 | ENE, E | 5.2 | 7.7 | Ci., Ci.-S. |  | Cu. | E | 3 | Ω² a. ○ ⊽ ● p. |
| 5 | 59.12 | 26.4 | 30.8 | 24 | 89.3 | Calm | 2.7 | 9 | Ci.-S. |  | Cu. | ENE | 8.9 | ⊤ a. p. ● d° ϟ p. |
| 6 | 58.65 | 27.6 | 32.8 | 23.6 | 85 | ENE | 6.6 | 6 | Ci. |  | Cu. | NE | 4.6 | Ω² a. ●° a. p. |
| 7 | 58.73 | 27.3 | 31.8 | 23.5 | 86.7 | ENE | 4.5 | 8.2 | Ci.-S., Ci. |  | Cu. | E | 34 | ● a. Ω a. p. |
| 8 | 58.27 | 27.8 | 32.8 | 23.7 | 83 | ENE | 5.1 | 2.3 | Ci. |  | Cu. | E | ------ | Ω² a. Ω ϟ° p. |
| 9 | 57.98 | 28.3 | 34.7 | 24 | 81.8 | SW | 6.5 | 1.8 | Ci. |  | Cu. | SW | ------ | Ω a. d° ⌒ ⊍° p. |
| 10 | 57.79 | 28.3 | 33.8 | 24.6 | 80 | SW quad. | 8.5 | 7.7 | Ci.-S. |  | Cu. | WSW | ------ | ◌° Ω a. ○ ⊍ ϟ° p. |
| 11 | 58.18 | 28.4 | 33 | 24.9 | 78.2 | SW, W | 7.3 | 9 | Ci.-S. |  | Cu. | W | ------ | Ω a. ⊕ a. p. |
| 12 | 57.94 | 27.6 | 32.3 | 24.6 | 85.2 | W | 5.6 | 8.5 | Ci.-S. |  | Cu. | W, NNW | .3 | Ω° a. ϟ ●° p. |
| 13 | 53.97 | 26.6 | 29.3 | 23.8 | 86.8 | WSW | 16.2 | 10 | Ci.-S. |  | S.-Cu. | W quad. | 141.2 | ●° a. p. ↙° ●² p. |
| 14 | 50.42 | 24.9 | 27 | 22.4 | 85.5 | SW | 28.7 | 10 | Ci.-S. |  | S.-Cu. | SW | 2.6 | ● d a. ↙° a. p. |
| 15 | 52.26 | 26.7 | 27.8 | 25.5 | 75.6 | SW | 19.3 | 10 | Ci.-S. |  | S.-Cu. | SW | ------ | d° a. p. |
| 16 | 54.20 | 27.8 | 30.3 | 25.1 | 76.7 | SSW | 13.6 | 10 | Ci -S. |  | Cu. | SSW | ------ | d° a. ⊕ a. p. |
| 17 | 55.60 | 27.6 | 32.3 | 24.5 | 81.3 | SW | 8.7 | 8.7 | Ci.-S. |  | Cu. | SW | ------ | Ω d° a. ϟ° Ω° p. |
| 18 | 55.63 | 27.4 | 32.3 | 24.8 | 80.7 | SW | 11.1 | 8 | Ci.-S. |  | Cu. | SW | .5 | Ω° a. ●° ϟ° p. |
| 19 | 55.97 | 27.6 | 33 | 24.5 | 80.2 | SW | 9.2 | 10 | Ci.-S. |  | Cu. | SW | ------ |  |
| 20 | 56.27 | 26.4 | 33.3 | 23.4 | 84.3 | SW, ENE | 3 | 4.8 | Ci. |  | Cu. | SW | 11.4 | Ω d° a. ● ϟ° p. |
| 21 | 55.40 | 26.1 | 32.3 | 23.1 | 87. | SW | 3 | 6.2 | Ci., Ci.-S |  | Cu. | SW | 5.8 | Ω² ● a. p. d ⊤ p. |
| 22 | 54.08 | 27.2 | 32.5 | 23.5 | 82 | SW | 6.6 | 8.3 | Ci.-S. |  | Cu. | SW, SSW | 1.5 | Ω² a. |
| 23 | 53.39 | 26.8 | 30.2 | 24.3 | 81.8 | SW | 11.8 | 10 | Ci.-S. |  | S.-Cu. | SW | 1.6 | ● a. d a. p. |
| 24 | 53.02 | 27.7 | 31.4 | 24.6 | 80.8 | SSW | 11.7 | 10 | Ci.-S. |  | Cu. | SSW | ------ | d° p. |
| 25 | 53.12 | 28.8 | 32.8 | 26 | 77 | SW | 13.2 | 8.3 | Ci.-S. |  | Cu. | SW | ------ |  |
| 26 | 54.34 | 28.5 | 33.9 | 25.3 | 81.7 | SW | 8.5 | 4.2 | Ci. |  | Cu. | SW | .5 | Ω a. ●° p. |
| 27 | 57.02 | 27.4 | 33.3 | 24.8 | 86.2 | SW | 4.7 | 4.3 | Ci.-S. |  | Cu. | SW | 17.5 | Ω ● a. ●° ⌈⊼ ϟ p. |
| 28 | 57.66 | 27.3 | 32.4 | 24.4 | 86.5 | Variable | 4.2 | 6.7 | Ci.-S., Ci. |  | Cu. | SW | ------ | ●° a. ϟ Ω° p. |
| 29 | 56.67 | 26.6 | 29.7 | 23.4 | 87.8 | SW | 3.5 | 5.7 | Ci. |  | Cu. | N, NE | 1.3 | Ω ● a. ●° p. |
| 30 | 55.67 | 27.3 | 31.9 | 24.2 | 84.7 | W | 7.4 | 9 | Ci.-S. |  | Cu. | W | .5 | Ω² a. d ⊤ p. |
| 31 | 54.44 | 26.1 | 27.8 | 24.9 | 88.7 | SW | 11.3 | 10 | Ci.-S. |  | S.-Cu. | WSW | 1.3 | d a. p. |
| Mean | 755.84 | 27.2 | 31.5 | 24.2 | 83.7 | ------ | 9.1 | 7.8 | ------ |  | ------ |  | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  | ------ |  | 572.1 |  |

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | mm. | °C. | °C. | °C. | Per ct. |  | 0-12. | 0-10. |  |  |  |  | mm. |  |
| 1 | 752.64 | 26 | 30 | 23.4 | 92.8 | WNW | 1.2 | 10 | A.-S. | E | N. | WNW | 55.4 | d a. p. ●² p. |
| 2 | 53.80 | 24.7 | 26 | 23.5 | 91.8 | SSW | 5.8 | 10 | Ci.-S. |  | N. | S | 37.4 | ↙° ● a. p. |
| 3 | 57.95 | 26.6 | 31 | 23.8 | 82.2 | SSW | 3 | 8.7 | Ci. | NW | Cu. | SSW | .8 | ● a. ϟ d p. |
| 4 | 58.96 | 26.4 | 32.2 | 23.4 | 86.3 | S, SSW | 1.8 | 8.3 | A.-S. | SE | N. | S | 2.5 | ○² a. ● ⌈⊼ ⊍² p. |
| 5 | 58.94 | 26.3 | 31.6 | 22.8 | 85 | Variable | 1.7 | 6.8 | Ci. | NE | Cu. | S, NE | ------ | ⊤ ϟ p. |
| 6 | 58.59 | 27.1 | 32.2 | 21.5 | 78 | NW, E | 1.3 | 5.3 | A.-Cu. | E | Variable |  | ------ | Ω² ≡ a. ⊽° p. |
| 7 | 58.20 | 28.1 | 32.6 | 23.6 | 79 | E | 1.5 | 6.7 | Ci. | SE | Cu. | E | ------ | Ω a. ϟ p. |
| 8 | 57.87 | 28.6 | 34.4 | 23.5 | 77 | E quad. | 1.7 | 7 | Ci.-S. |  | Cu. | E | 2.8 | Ω² ≡ a. ⊤ ϟ ● p. |
| 9 | 57.94 | 27.7 | 33.3 | 24.5 | 83.3 | SSE | 1.3 | 6.8 | A.-Cu. | E | N., Cu. | S quad. | 42.4 | ●² ⌈⊼ p. |
| 10 | 58.40 | 26.1 | 31.3 | 22 | 88.8 | SSE | 1.7 | 8.8 | Ci. | NE | N. | WSW | 12.2 | ● ⊤ a. d² ⌈⊼ p. |
| 11 | 58.60 | 26.6 | 32 | 23.9 | 87 | SW | 1.7 | 8.5 | Ci. | NE | N., Cu. | NW | 1.5 | ● ⊤ ϟ p. |
| 12 | 58.15 | 27.6 | 33.2 | 23.4 | 82.8 | S quad. | 1.5 | 8 | A.-Cu. | SW | N., Cu. | WNW | 17.5 | Ω ≡° a. ● ⌈⊼ p. |
| 13 | 55.97 | 26.7 | 32.6 | 23 | 85.2 | W quad. | 1.5 | 9.2 | Ci.-S. | ENE | N. | NW | 17.5 | d ● p. |
| 14 | 51.60 | 24.1 | 26.2 | 22.4 | 94.5 | SW | 1.8 | 10 | A.-S. |  | N. | W quad. | 65.3 | ● a. p. |
| 15 | 51.16 | 23.4 | 24.3 | 22.5 | 96.7 | SSW | 2.5 | 10 | Ci.-S. |  | N. | SW | 95.7 | ●² a. p. d p. |
| 16 | 53.74 | 24 | 25.6 | 22.9 | 95.2 | SW | 1.8 | 10 | Ci.-S. | NW | N. | SW | 38.9 | ●² ⊤ a. d a. p. |
| 17 | 55.47 | 24 | 26.2 | 22.9 | 97 | SSW | 1.5 | 10 | Ci.-S. |  | N. | SW | 75.7 | d ●² a. p. |
| 18 | 56.06 | 24.3 | 25.2 | 23.3 | 97.2 | SSW | 1.3 | 9.3 | Ci.-S. |  | N. | S quad. | 6.6 | d a. ● p. |
| 19 | 55.85 | 25.4 | 28.4 | 22.9 | 91.5 | SSW | 2.2 | 8.8 | Ci.-S. | E | Cu. | SW | ------ | d a. ○² ϟ p. |
| 20 | 55.94 | 24.3 | 29.2 | 23 | 94.7 | SSW | 2 | 8 | Ci.-S. | SE | N. | S | 20.8 | Ω a. ● p. d a. p. |
| 21 | 54.91 | 25 | 27.7 | 23 | 91.5 | SSE | 2 5 | 9.7 | Ci.-S. | WNW | N. | S, SW | 3.3 | ● a. d a. p. |
| 22 | 53.55 | 24.7 | 27.5 | 23.5 | 95 | S quad. | 3.5 | 10 | Ci.-S. |  | N. | SW | 17.5 | ● d p. |
| 23 | 52.84 | 24.6 | 26.3 | 23 | 96.8 | SSW | 3.3 | 10 | A.-S. | WNW | N. | SW | 72.6 | ● d a p. |
| 24 | 52.30 | 25.1 | 26.7 | 23.7 | 96.8 | SSW | 4 | 9.5 | A.-S. | NW | N. | SW | 51.8 | ⊤ a. ● a. p. |
| 25 | 52.27 | 26.3 | 28.7 | 24.8 | 92.5 | S quad. | 4.5 | 8.2 | Ci.-S. | NNW | N. | SW | 5.1 | ● a. ↙° p. |
| 26 | 54.06 | 26.7 | 31 | 24.9 | 90.3 | SW | 3 | 8.5 | A.-Cu. | W | N. | WSW | 2 | ● a. ⌒ ϟ p. |
| 27 | 56.88 | 27.5 | 32.3 | 24 | 85.8 | S quad. | 1.7 | 7.8 | A.-Cu. | W | N. | SW | 1.3 | d a. ● ϟ p. |
| 28 | 57.50 | 27.7 | 32.3 | 23.2 | 84.8 | SSW | 1.8 | 6.3 | Ci. | NE | Cu. | SW | 10.2 | Ω² a. ● ⊤ ϟ p. |
| 29 | 56.82 | 26.1 | 32.6 | 22.6 | 88.8 | SW | 1 | 6 | Ci.-S. | SE | Cu. | SW | 2.8 | ≡° a. ● ⊤ ϟ p. |
| 30 | 56.12 | 26.6 | 32.8 | 23.4 | 87.2 | SW quad. | 1.8 | 7.8 | Ci.-S., Ci. |  | Cu. | W | 11.7 | ≡° a. ○² ● ⊤ ϟ p. |
| 31 | 55.10 | 25.6 | 27.8 | 23.9 | 94.2 | SW | 1.2 | 10 | A.-S. |  | N. | SW | 5.1 | d p. |
| Mean | 755.75 | 25.9 | 29.8 | 23.3 | 89.3 | ------ | 2.2 | 8.5 | ------ |  | ------ |  | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  | ------ |  | 676.4 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 752.34 | 27.6 | 30.9 | 24.8 | 88 | NW, W | 13.4 | 8.5 | A.-Cu. | S.-Cu., N. NW | 10.7 | d° ↯° p. |
| 2 | 51.92 | 24.6 | 27.8 | 23.5 | 94.8 | SE | 25 | 10 | -------- | N. SE | 75.7 | d° p a. ●$^2$ a. p. |
| 3 | 57.05 | 27 | 33.3 | 24 | 86.3 | SE | 17.1 | 9.5 | A.-Cu. | S.-Cu., N. S | -------- | d° a. ↯° ⊍$^2$ p. |
| 4 | 58.63 | 27.2 | 34.9 | 23.4 | 82.8 | SE,S | 10.6 | 9.3 | A.-Cu. | S.-Cu., N. | 5.9 | ⊤° p ● p. |
| 5 | 58.88 | 25.8 | 34.4 | 22.8 | 88.2 | SE | 7.7 | 8.5 | A.-Cu. | S.-Cu. | 5.6 | d° a. ↯° ⊤° p p. |
| 6 | 58.46 | 27.8 | 34.4 | 22.2 | 78.8 | Variable | 7.7 | 3.7 | A.-Cu. | Cu., S.-Cu. | -------- | ⊕° p. |
| 7 | 58.28 | 29.1 | 34.4 | 24.6 | 77.8 | NW | 9.1 | 5.3 | A.-Cu. | Cu., S.-Cu. | -------- | ⌒ ↯° p. |
| 8 | 57.95 | 29.3 | 35.9 | 24.5 | 78.3 | SE, NW | 9.9 | 5 | Ci., A.-Cu. | Cu., S.-Cu. | 10.2 | ↯° a. ↯ ☈ p p. |
| 9 | 57.91 | 27.9 | 33.4 | 24.4 | 84.3 | NE, NW | 9.9 | 8 | A.-Cu. | Variable. | .5 | ☈ d° a. p. |
| 10 | 58.11 | 28.7 | 33.2 | 25.4 | 79.7 | NW | 8.4 | 8.2 | A.-Cu. | S.-Cu. W | -------- | ⊕ p. |
| 11 | 58.21 | 28.5 | 33.4 | 24.1 | 79.2 | NW | 8.9 | 7.7 | A.-Cu. | S.-Cu. | -------- | ⌒ ⊍° p. |
| 12 | 58.02 | 28.6 | 33.4 | 24.3 | 80.7 | W, NW | 9.5 | 6.3 | Ci. | Cu. | 29.2 | ⌒ ↯ ☈ p ● p. |
| 13 | 55.96 | 27.5 | 31.4 | 24.5 | 87.5 | NW | 15.6 | 9.7 | A.-Cu. | N. NW | 12.2 | d° ● a. p. |
| 14 | 51.05 | 23.9 | 27.7 | 20.4 | 94.3 | W quad. | 30.7 | 10 | A.-Cu. | N. W | 173.7 | ● a. ●$^2$ ⊤ ↙° p. |
| 15 | 50.37 | 23.6 | 24.9 | 20.5 | 96.3 | SW, W | 23.7 | 10 | -------- | N. WSW | 94.6 | ●$^2$ a. p. |
| 16 | 53.44 | 24.2 | 26.3 | 23 | 95.8 | W quad. | 12.3 | 10 | -------- | N. SW quad | 173.4 | ● a. ↯ ●$^2$ p. |
| 17 | 55.11 | 23.7 | 24.8 | 22.7 | 98.2 | E quad. | 9.3 | 10 | -------- | N. SW | 204.4 | ●$^2$ a. p. ↯ ☈ p. |
| 18 | 55.79 | 24.1 | 25.6 | 22.9 | 97.8 | SE | 6.7 | 9.8 | -------- | N. SE | 30.8 | ↯ ☈ ●$^2$ a. ● p. |
| 19 | 55.65 | 25.8 | 29.9 | 23.2 | 91.8 | SE quad. | 8.6 | 10 | A.-Cu. | S.-Cu. SE | -------- | d a. ↯° p. |
| 20 | 55.50 | 25.4 | 30.3 | 23.4 | 92.8 | SE | 14.8 | 9.7 | A.-Cu. | S.-Cu., N. SE | 3.4 | d p. |
| 21 | 54.48 | 25 | 28.9 | 23 | 93.8 | SE | 13.2 | 9.8 | A.-Cu. | N. SE, SSW | 10.8 | d a. p. ⌒ ● p. |
| 22 | 52.92 | 25.3 | 28.4 | 23.5 | 95.7 | SE | 12.3 | 10 | A.-Cu. | N. S quad. | 22.7 | d a. ● p. |
| 23 | 52.50 | 23.9 | 25.1 | 23.1 | 98.5 | SE quad. | 12.5 | 10 | -------- | N. SW | 183.9 | ●$^2$ a. p. |
| 24 | 51.77 | 24.8 | 25.9 | 23.4 | 98.3 | SE | 13.5 | 10 | -------- | N. SW | 68.9 | ●$^2$ ↯°a. ⊤°a.p.● |
| 25 | 52.07 | 25.4 | 28.4 | 23.5 | 96 | Variable | 8 | 10 | A.-Cu. | N. SW | 39.4 | ⊤° a. ● a. p. ⌒ p. |
| 26 | 53.96 | 25.7 | 29.1 | 24.1 | 96.2 | SE | 7.2 | 10 | A.-Cu. | N. SW | 28.1 | d° ● a. p. |
| 27 | 56.67 | 26.5 | 31.2 | 23.3 | 90.8 | SE, SW | 7.3 | 8.5 | A.-Cu. | S.-Cu. SW | .8 | ⌒ a. d a. p. ↯ p. |
| 28 | 57.48 | 27.3 | 31.6 | 24.6 | 91.5 | Variable | 7.8 | 8 | Ci.-S., A.-Cu. | Fr.-Cu. SE | 4.5 | p ↯ ☈ p. |
| 29 | 56.70 | 26.8 | 31.6 | 23.5 | 89.8 | SE, NW | 8.7 | 7.7 | Ci. | Fr.-Cu. SE | 72.1 | ⌒ p$^2$ ↯ ☈ p. |
| 30 | 56.09 | 26.9 | 32.1 | 23.9 | 90.3 | NE, NW | 8.6 | 7.7 | Ci., A.-Cu. | Fr.-Cu. E | 13.2 | p° ↯ p. |
| 31 | 55 | 26.2 | 29.2 | 24.8 | 92.8 | NW quad. | 7.2 | 10 | A.-Cu. | N. NW | 25.7 | ●° a. d p° p. |
| **Mean** | 755.43 | 26.3 | 30.4 | 23.5 | 89.9 | -------- | 11.8 | 8.7 | -------- | -------- | -------- | |
| **Total** | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 1,300.4 | |

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 7.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 752.36 | 28.2 | 32 | 25.2 | 86.7 | NW quad. | 2.3 | 10 | Ci.-S. | N.-Cf. | 11.1 | ◯$^2$ a. p a. p. |
| 2 | 50.32 | 25.4 | 28.9 | 23.5 | 94.8 | S | 5.5 | 10 | -------- | N. | 149.9 | ↙ ●$^2$ a. p. |
| 3 | 56.40 | 25.9 | 30.5 | 23.4 | 87.7 | S quad. | 5 | 10 | Ci.-S., A.-Cu. | Cu. S | 4 | ● a. p. ↙° ↯ p. |
| 4 | 58.23 | 27 | 31.9 | 23.6 | 84.5 | SE quad. | 2.8 | 10 | Ci.-S. | S.-Cu. | 1 | ◯$^2$ a. p. ●° p. |
| 5 | 58.71 | 26.5 | 32 | 23.5 | 87 | SE quad. | 2.2 | 10 | Ci.-S. | S.-Cu. | 17 | Ω ≡° a. ● ☈ p. |
| 6 | 58.41 | 27.7 | 32.8 | 22.4 | 81.5 | Variable | 2.3 | 5.5 | Ci.-S. | Cu. | -------- | ↯ Ω ≡° a. |
| 7 | 58.16 | 28.9 | 32.1 | 25.5 | 79.7 | NW | 1.5 | 8.3 | Ci.-S. | Cu. NNW | -------- | Ω° a. |
| 8 | 57.75 | 28 | 33.4 | 24.4 | 83 | S | 2 | 7.5 | Ci.-S. | Cu.-N., Cu. | -------- | Ω ≡° a. ☈ ↯ p. |
| 9 | 57.81 | 28.1 | 32.3 | 24.6 | 83 | NW quad | 2.2 | 8.3 | Ci.-S. | Cu.-N. | 3.6 | Ω° ≡° a. ☈ a. p. |
| 10 | 58.04 | 27.6 | 32.4 | 24.4 | 85.5 | S quad. | 2 | 10 | Ci.-S. | Cu. | .5 | ● a. ⊍ p. |
| 11 | 58.08 | 27.8 | 32.2 | 24.4 | 84.7 | S quad. | 2.3 | 10 | Ci.-S. | Cu., Cu.-N. | 5.3 | ● ☈ a. ⊍° p. |
| 12 | 58.01 | 27.8 | 32 | 23.8 | 84.8 | S, W | 2.2 | 10 | Ci.-S. | Cu. S | 2.3 | ≡°●°a.◯°⊍°p. |
| 13 | 56.09 | 28.4 | 31.9 | 25.4 | 84.8 | NW quad. | 2.2 | 10 | Ci.-S. | Cu., N.-Cf. NW | 20.1 | ● ◯$^2$ a. p. |
| 14 | 51.20 | 24.6 | 27.9 | 21 | 91.6[1] | W | 6.5 | 10 | -------- | N. | 65.8 | ● ↙° a. ↙ ●$^2$ p. |
| 15 | 49.17 | 23.2 | 24.4 | 20.9 | -------- | SW | 10.8 | 10 | -------- | N. | 467.1 | ↙$^2$ ●$^2$ a p. |
| 16 | 52.53 | 24.2 | 27 | 22.9 | 96.7 | SW | 5 | 10 | -------- | N. | 141.8 | ↙ a. ●$^2$ a. p. ⊤ p. |
| 17 | 54.08 | 25.4 | 27.4 | 23 | 97 | SSW | 2.5 | 10 | -------- | N.-Cf. WSW | 123.8 | ☈ a. ⊤ p. ●$^2$ a.p. |
| 18 | 55.11 | 23.9 | 25.1 | 23.1 | 98.3 | S | 2.7 | 10 | -------- | N.-Cf. | 98.2 | ☈° ●$^2$ a. ● p p. |
| 19 | 55.13 | 25.4 | 29.1 | 22.4 | 90.7 | S quad. | 3 | 10 | Ci.-S. | S.-Cu. | -------- | p a. |
| 20 | 54.94 | 25.4 | 31.1 | 22.9 | 87.8 | S | 3.2 | 9.5 | Ci.-S. | S.-Cu. | 5.6 | Ω ≡° a. ● p. p |
| 21 | 53.70 | 24.1 | 25.9 | 23.1 | 96.7 | S | 3.5 | 10 | -------- | N. | 66.1 | ● p a. p. |
| 22 | 52.20 | 24.8 | 28.9 | 23.1 | 94.5 | SSE | 2.8 | 10 | -------- | N.-Cf. S | 126.6 | ●$^2$ p a. p. |
| 23 | 51.34 | 23.9 | 25 | 22.9 | 97.8 | SSE | 2.8 | 10 | -------- | N. | 234.4 | ●$^2$ a. p. ☈ p. |
| 24 | 50.53 | 25.3 | 27 | 23 | 96 | S quad. | 4.7 | 10 | -------- | N.-Cf. SW | 130.7 | ●⊤a.↙°●$^2$☈p. |
| 25 | 51 | 25.9 | 28 | 23 | 94.5 | SSW | 4.2 | 10 | -------- | N.-Cf. SW | 81.1 | ↙° a. ● a. p. |
| 26 | 53.15 | 26.5 | 30.4 | 24.1 | 91.3 | SSW | 3.7 | 10 | Ci.-S. | N.-Cf. SW | 33.5 | p a. p. ● p. |
| 27 | 56.28 | 26.4 | 31.9 | 24.1 | 92.7 | S quad. | 1.5 | 10 | Ci.-S. | N.-Cf. | 20.4 | p ● a. p. ☈ p. |
| 28 | 57.25 | 26.9 | 30.9 | 24.3 | 90 | Variable | 1.3 | 10 | Ci.-S. | Cu.-N., S.-Cu. | 9.7 | d a. ● ☈ ⌒ p. |
| 29 | 56.47 | 27 | 31.1 | 23 | 88.7 | S quad. | 2.2 | 10 | Ci.-S. | Cu. S | 5.8 | ● a. p. ⊤ ⌒ p. |
| 30 | 55.86 | 27 | 31.4 | 23.9 | 86.8 | S | 1.7 | 10 | Ci.-S. | S.-Cu. | 6.3 | ≡°a.●°a.p.◯$^2$p. |
| 31 | 54.74 | 26.2 | 29.7 | 23.9 | 92.5 | SW quad. | 1.3 | 10 | Ci.-S. | S.-Cu., N. | 59.7 | ≡° a. ● p. p a. p. |
| **Mean** | 754.94 | 26.2 | 29.9 | 23.5 | 89.7 | -------- | 3.2 | 9.6 | -------- | -------- | -------- | |
| **Total** | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 1,891.4 | |

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[1] Deduced from five observations on y

## METEOROLOGICAL DATA, ETC.—Continued.

### BAGUIO.[1]

[$\phi$=16° 25′ E; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 631.58 | 18.7 | 23.2 | 16.5 | 94.3 | NW quad. | 11.1 | 10 | A.-Cu. ENE | N. ENE | 63.8 | d a. ● p. ≡² a. p. |
| 2 | 30.14 | 16.8 | 18.5 | 16.1 | 9 .7 | S quad. | 39 | 10 | ------ | N. | 58.4 | ●² a. ↙° a.p. ● p. |
| 3 | 35.22 | 17.7 | 19.5 | 15.9 | 88.5 | SE quad. | 26.6 | 9.7 | Ci.-S. | Fr.-Cu. SSE,SSW | 1.5 | d² a. ● ○ p. |
| 4 | 36.67 | 18.2 | 23.8 | 15.6 | 88.8 | E quad. | 15 | 9.7 | A.-Cu. ESE | Cu. S | 10.4 | ○ a. ⊤ ● ≡² p. |
| 5 | 36.78 | 18.2 | 23.2 | 15.5 | 91.3 | W, NE | 13.2 | 8.6 | Ci. NNE | Cu. | 10.7 | p ● ≡² ⊤ p. |
| 6 | 36.73 | 18.9 | 23.2 | 14.9 | 88.5 | Variable | 9.5 | 6.1 | Ci.-S. | Cu. NE by E | ------ | d° p. |
| 7 | 36.51 | 18.9 | 22.9 | 16 | 93.7 | W, NE | 9.2 | 7.7 | Ci. | Cu.-N. ESE | 6.9 | Ω² a. ●° d ⌒⊤ p. |
| 8 | 36.17 | 19.2 | 24.1 | 16.2 | 90 | Variable | 11.2 | 5.9 | Ci. | Cu.-N. E | 17.6 | p ⊤ ● p |
| 9 | 36.21 | 18.5 | 23.8 | 16.5 | 96.3 | W quad. | 12 | 9.3 | Ci.-S. | Fr.-N. | 14.3 | d ≡² ● ☈ p. |
| 10 | 36.25 | 18.4 | 23.8 | 16.1 | 93.2 | W quad. | 14.6 | 8.7 | Ci., Ci.-S. | Cu.-N. | 8.9 | ≡ d° p. |
| 11 | 36.45 | 17.9 | 23.3 | 16.2 | 92 | NW quad. | 12.3 | 9.6 | Ci.-S. | Cu.-N. WNW | 70.4 | ● a. p. d ≡ p. |
| 12 | 36.49 | 18 | 22.3 | 15.1 | 88.8 | W | 14.3 | 8.7 | Ci.-S., Ci. | Fr.-Cu. WNW | 6.1 | Ω a. ≡ ● p. |
| 13 | 34.40 | 17.8 | 22.6 | 15.6 | 94 | NW | 15.1 | 9.9 | A.-Cu. NE | Cu. N | 7.9 | ≡ d° ● p. |
| 14 | 28.95 | 16.6 | 17.8 | 13.6 | 99.2 | W quad. | 44.9 | 10 | ------ | N. | 879.8 | ●≡a.p.●²☈↙° |
| 15 | 27.06 | ------ | ------ | ------ | ------ | WSW | 103.2 | 10 | ------ | N. | 733.6 | ●² ↙² ≡ a. p, |
| 16 | 30.50 | ------ | ------ | ------ | ------ | W | ------ | 10 | ------ | N. | 424.9 | ●² ↙ ≡² a. p. |
| 17 | 32.96 | 16.7 | 17.4 | 15.9 | 100 | W quad. | ------ | 10 | ------ | N. | 200.4 | ●² ↙° ≡ a. p. |
| 18 | 33.71 | 16.8 | 19.1 | 15.3 | 97 | W | ------ | 10 | A. S. | S.-Cu. | 22.6 | ● a. ≡ a. p. d p. |
| 19 | 33.62 | 17.7 | 20.9 | 15.1 | 92.3 | SE quad. | 9.1 | 9.7 | A.-Cu., Ci.-S. | S.-Cu. SE | 2.3 | ≡ a. |
| 20 | 33.31 | 16.9 | 22.2 | 14.9 | 95.2 | SE | 14.8 | 9.1 | A.-Cu. SSE | Fr.-Cu. ESE | 17.4 | Ω p a. d ● p. ≡ |
| 21 | 32.53 | 16.8 | 19.8 | 15.1 | 93.7 | SE quad. | 15.8 | 10 | Ci.-S. | N. | 6.4 | d° ● a. p. |
| 22 | 31.47 | 17.2 | 20.3 | 15.7 | 94.3 | S quad. | 12.6 | 10 | A.-Cu. | N. | 14.3 | ● d ≡ a. p. |
| 23 | 30.60 | 16.8 | 17.6 | 16 | 98.5 | SW | 39.1 | 10 | ------ | N. | 176.4 | ●² ≡ ↙° a. p. |
| 24 | 30.04 | 17.1 | 18 | 16.2 | 99.2 | SW | 60.3 | 10 | ------ | N. | 157.6 | ● ≡ ↙° a. p. |
| 25 | 30.15 | 17.5 | 18 | 15.4 | 99.3 | SW | 70.1 | 10 | ------ | N. | 145 | ●² ↙ ≡² a. p. |
| 26 | 32.23 | 17.4 | 17.9 | 16.8 | 98.2 | SW | 39.7 | 10 | ------ | N. | 64.2 | ● ↙° ≡ a. p. p p. |
| 27 | 34.91 | 18.2 | 22.4 | 16.3 | 95.7 | SE, W | 11.4 | 9.9 | ------ | Fr.-N. SW | 5.3 | d a. p. ≡² ⊤ p. |
| 28 | 35.74 | 18.2 | 22.8 | 16.2 | 92.2 | SW quad. | 9.7 | 9.9 | Ci.-S. | Cu. | 25.6 | ☈ ≡² d ● p. |
| 29 | 35.03 | 18.4 | 22.3 | 15.9 | 96.5 | W | 8.8 | 9.3 | Ci.-S. | Cu. | 8.2 | ≡² a. p. ● d° p. |
| 30 | 34.38 | 18.2 | 22.3 | 15.3 | 95.8 | W | 7.5 | 9.3 | Ci. NE | Cu. E | 6.9 | ≡ ⊤ d ● p. |
| 31 | 33 | 17 | 18.5 | 15.3 | 98.8 | W quad. | 23.7 | 10 | A.-S. | N. | 213.9 | d a. p. ●² ≡² p. |
| Mean | 633.54 | 17.7 | 21.1 | 15.7 | 94.7 | ------ | 24.1 | 9.4 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 3,381.7 | |

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 752.38 | 27.7 | 32.7 | 23.5 | 83.7 | NE quad. | 7.1 | 6.3 | A.-Cu., Ci.-S. | Cu.-N. NNE | 3.8 | d a. p. ● p. |
| 2 | 49.31 | 26.8 | 28.5 | 23 | 80.8 | SSE | 13.8 | 9.8 | Ci.-S. | Cu.-N. NE, S | 34.3 | ● d° a. d p. |
| 3 | 55.83 | 28.2 | 32 | 24 | 75 | S quad. | 16.5 | 8.8 | Ci.-S. | S.-Cu. | .3 | ⌓ p. |
| 4 | 58.20 | 27.1 | 32.6 | 24 | 82.5 | SE quad. | 9.8 | 8.3 | Ci.-S. | N. N | 5.3 | ●° a. d ● p. |
| 5 | 58.78 | 27.4 | 32.8 | 23 | 76.5 | Variable | 7.3 | 3 | Ci.-S. | Cu. | 6.4 | d² ● ☈° p. |
| 6 | 58.47 | 27.7 | 33 | 23 | 78.5 | NE quad. | 7.4 | 2.5 | Ci.-S. | Cu. | ------ | |
| 7 | 58.03 | 28.8 | 33.2 | 25 | 78.2 | Variable | 6.8 | .3 | Ci., Ci.-S. | Cu. WNW | ------ | |
| 8 | 57.76 | 28.8 | 32.8 | 25.5 | 79.5 | Variable | 6.7 | 1.5 | Ci.-S. | Cu. | ------ | ☈° ⚡° p. |
| 9 | 57.79 | 28.3 | 32.5 | 25 | 80.7 | E | 8.1 | 4 | Ci.-S. | Cu. WSW | ------ | ☈ p. |
| 10 | 58.08 | 28 | 32.5 | 24 | 78.3 | ESE, SW | 6.8 | 2 | Ci.-S. | Cu. | 11.4 | ⌓ p. |
| 11 | 58.08 | 28.1 | 32.6 | 23.1 | 81.7 | S quad. | 9.2 | 5.2 | Ci.-S. | N., Cu. | ------ | ● d a. ⌓ p. |
| 12 | 58.18 | 28.1 | 32.4 | 25 | 79.5 | SE quad. | 5.9 | 3.5 | Ci.-S. | Cu. SSW | ------ | ⌓ p. |
| 13 | 56.09 | 27.4 | 32.3 | 24 | 80.8 | NE quad. | 11.9 | 6 | Ci -S. | N. N | 49.8 | Ω a. d ●° ⌓ p. |
| 14 | 49.54 | 25.4 | 28.7 | 22 | 93.5 | Variable | 21.7 | 10 | Ci.-S. | N. N | 81.6 | ●² a. p. ↙° p. |
| 15 | 45.19 | 25.5 | 28 | 23.2 | 94.5 | SSW | 29.4 | 10 | ------ | N. SW | 287.4 | ↙°a ●² a. p. ↙ p. |
| 16 | 51.17 | 25 | 26 | 22.5 | 94.5 | SW | 26.8 | 10 | ------ | N. SW | 132.7 | ↙ a. ●² a. p. |
| 17 | 51.05 | 24 | 25.4 | 22.4 | 96.2 | S quad. | 15.6 | 10 | Ci.-S. | N. SSW | 177.9 | ●² a. p. |
| 18 | 55.05 | 25.1 | 27.6 | 23.2 | 91.2 | S quad. | 11.9 | 8.7 | Ci.-S. | Cu.-N. | 31.3 | ●² a. ● ⌓ p. |
| 19 | 55.07 | 26.5 | 29.8 | 23.4 | 82.5 | SE quad. | 10.6 | 7.8 | Ci.-S. | S.-Cu., Cu. | 41.6 | ● ☈° p. |
| 20 | 54.92 | 25.8 | 30.4 | 23 | 86.5 | SE quad. | 7.7 | 8 | Ci.-S. | Cu.-N. SSW | 3 | d ● p. |
| 21 | 53.60 | 26 | 30.9 | 23 | 84.7 | SE quad. | 10.6 | 6.3 | Cl.-S. | N. SSW | 3.3 | ●° p. |
| 22 | 52.13 | 26.8 | 30.5 | 23.1 | 81 | SE, S | ------ | 3.3 | Ci.-S. | Cu.-N. S | 8.1 | d ● p. |
| 23 | 51.09 | 25 | 27.5 | 23 | 90.3 | SSE | 19.6 | 9.3 | Ci.-S. | N. S | 40.7 | ● a. p. |
| 24 | 50.43 | 24.8 | 26.3 | 22.8 | 95.5 | S | ------ | 10 | ------ | N. SSW | 224.6 | ●² a. p. ↙° ⊤ p. |
| 25 | 50.10 | 25.2 | 27 | 21.5 | 94.5 | S | 30.2 | 10 | Ci.-S. | N. SW quad. | 218.2 | ●² ↙° a. p. |
| 26 | 52.88 | 25.7 | 29.4 | 21.3 | 94.2 | S quad. | 19.5 | 10 | Ci.-S. | N. SW | 48.5 | ●² a. ● p. |
| 27 | 56.35 | 26.6 | 31 | 21.8 | 85.8 | S quad. | 9.2 | 5 | Ci -S. | Cu.-N., Cu. | ------ | ● a. d° a.p. ⚡° p. |
| 28 | 57.42 | 27.2 | 31.8 | 24 | 83.2 | Variable | 6.7 | 7.2 | Ci.-S. | S.-Cu., Cu. | 6.6 | ☈° d² ● p. |
| 29 | 56.50 | 27.2 | 31.5 | 23.1 | 82.8 | Variable | 4.9 | 1.5 | Ci.-S. | Cu.-N. | ------ | ⚡° p. |
| 30 | 55.88 | 27.5 | 31 | 25.1 | 86 | Variable | 4.8 | 5.8 | Ci.-S. | Cu.-N. NE | 0.5 | d. p. |
| 31 | 54.56 | 26.2 | 30.3 | 23 | 89.7 | Variable | 6.9 | 9.5 | Ci -S. | Cu.-N. NE,WSW | 224.2 | ●° a. p. ●² p. |
| Mean | 754.61 | 26.7 | 30.4 | 23.3 | 85.2 | ------ | 12.2 | 6.6 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1,641.5 | |

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[1] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### TUGUEGARAO.

[φ=17° 36′ N; λ=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. |  |  |
|  | mm. | °C. | °C. | °C. | Perct. |  | 0-12. | 0-10. |  |  | mm. |  |
| 1 | 752.74 | 26.6 | 29.8 | 24.3 | 89.7 | NW | 1.2 | 9.7 | ------ | Cu.-N. N | 50.6 | ●² a. ● d p. |
| 2 | 51.89 | 27.9 | 32.7 | 25 | 78 | SE | 3.3 | 10 | Ci.-S. | Cu. S | ------ | ↙° p. |
| 3 | 56.76 | 28.7 | 34 | 24.4 | 78.7 | S, SE | 1.8 | 7.5 | Variable | Cu. | ------ | ϟ p. |
| 4 | 58.54 | 28.2 | 35.4 | 23.6 | 75.8 | SE | 1 | 7.5 | Ci.-S. | S.-Cu., Cu.-N. | ------ | ⌓ a. ⊤ ϟ² p. |
| 5 | 59.20 | 26.8 | 35.2 | 22.3 | 83.7 | Calm | 0 | 5 | Ci. | Cu. S, SW | 6.4 | ⌓² a. ● ⌈ϟ ⌒ p. |
| 6 | 58.72 | 27.6 | 35 | 21.8 | 78.7 | SE | .2 | 3.3 | Ci., Ci.-S. | Cu. SW | ------ | ● a. |
| 7 | 58.20 | 28.4 | 35.9 | 23.4 | 74.3 | Calm | 0 | 2.3 | ------ | Cu. | ------ | ⌓ a. |
| 8 | 57.66 | 29 | 36.9 | 22.4 | 72 | E quad. | .5 | 2.8 | ------ | Cu. | ------ | ⌓² a. ϟ p. |
| 9 | 57.19 | 28.8 | 36.3 | 24.6 | 77.5 | E quad. | .8 | 6.5 | ------ | Cu.-N. N | ------ | ⌈ϟ° a. p. ϟ² p. |
| 10 | 57. 2 | 28.8 | 36 | 23.3 | 76.2 | Variable | .5 | 5.3 | Ci. | Cu. | ------ | ⌈ϟ ϟ p. |
| 11 | 57.58 | 28.9 | 36.1 | 23.7 | 76 | Variable | .7 | 6.8 | Ci. | Cu. S | ------ | ⌓ a d ⌈ϟ p. |
| 12 | 57.89 | 28.4 | 36.1 | 24 | 79 | SE, N | .3 | 6.8 | Ci., Ci.-S. | Cu. N | 9.1 | ⌓ a. ● ψ p. |
| 13 | 55.94 | 27.6 | 31.8 | 23.8 | 81.8 | N quad. | 1.3 | 7.5 | Ci. | Cu.-N. N | 32.2 | ● a p. |
| 14 | 45.40 | 25.6 | 28.4 | 22.6 | 92.5 | NW | 5.2 | 10 | ------ | Cu.-N. N, NW | 127.8 | ●² a. p. ↙² p. |
| 15 | 43.47 | 23.5 | 26.1 | 21 | 87 | SE | 4.7 | 10 | Ci.-S. | Cu.-N., N. S | 26.4 | ●² ↙² d a ↙ᶜ p. |
| 16 | 49.21 | 25.4 | 28.5 | 22 | 87.7 | S, SE | .7 | 9.3 | ------ | Cu.-N. | ------ | ● a. d p. |
| 17 | 53.57 | 26.6 | 33.5 | 22.3 | 85.3 | Calm | 0 | 8.3 | ------ | S.-Cu. SW | ------ | ⌓ a. |
| 18 | 54.68 | 26.4 | 33.7 | 24.1 | 88.3 | SW | .2 | 8.2 | Ci., A.-Cu. | Cu.-N., N. | 8.6 | ⌓ a. ⌈ϟ ● p. |
| 19 | 55.02 | 27 | 33 4 | 23.4 | 88.8 | SE, NW | .7 | 8.7 | Ci.-S. | Cu.-N. SE | ------ | d a. p. ⌈ϟ ϟ p. |
| 20 | 55.24 | 27.7 | 33.8 | 23.6 | 86.2 | S | .2 | 8.8 | Ci. | Cu.-N. E | 3 | ⊤ ● ϟ p. |
| 21 | 54.19 | 27.9 | 34.6 | 22.8 | 79.3 | SE | .7 | 8 | Ci.-S. | Cu., Cu.-N. S, SE | ------ | ⌓ ○ a. |
| 22 | 52.43 | 28 8 | 34.5 | 23.6 | 78.5 | SW | .7 | 4.8 | Ci. | Cu. S | ------ | ⌓ a. ϟ p. |
| 23 | 51.29 | 29.1 | 35.2 | 24.8 | 74.7 | S quad. | 1 | 6.8 | Ci. | Cu., Cu.-N. SW | 1.5 | ⌓ a. ⊤ ● ϟ p. |
| 24 | 50.88 | 27.3 | 32.4 | 24 3 | 85.5 | S quad. | .5 | 9.8 | ------ | Cu.-N. SE | 2.3 | d a. p. |
| 25 | 49.99 | 28 | 35.1 | 24.2 | 80.7 | SE | .8 | 7.3 | ------ | Cu.-N. SE, W | 2.5 | ● p. |
| 26 | 52.31 | 27.9 | 35.4 | 24 | 82.2 | W quad. | 1.2 | 8.8 | Ci. | Cu.-N W quad. | 15.7 | d a. ●² ⌈ϟ² p. |
| 27 | 56.10 | 28.4 | 35.7 | 25 | 84.2 | Variable | .8 | 6.5 | Variable | Cu., Cu -N. S | 48.8 | d ϟ a. ⌈ϟ ●² p. |
| 28 | 57.52 | 27.4 | 33.5 | 22.9 | 84.3 | Variable | 1.2 | 8 | Ci. | Cu.-N. SE quad. | 28.4 | d a. ●² ϟ p. |
| 29 | 56.53 | 27.2 | 35.2 | 22.9 | 81.2 | W | .2 | 5.7 | Ci. | Cu. SE, N | 2.8 | d a. ● p. |
| 30 | 55.67 | 28.1 | 33.6 | 23.5 | 84.8 | NW quad. | .7 | 7.2 | Ci., Ci.-S. | Cu., Cu.-N. S. E | 8.4 | d ϟ p. |
| 31 | 53.12 | 24.7 | 27.5? | 22.9 | 92 | N quad. | .7 | 9.3 | ------ | Cu.-N. NW | 178.1 | ● a. ●² p. |
| Mean | 754.39 | 27.5 | 33.6 | 23.4 | 82.1 | ------ | 1 | 7.3 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 552.6 |  |

### APARRI.

[φ=18° 22′ N; λ=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Clouds. Amount (mean). | Upper. | Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | mm. | °C. | °C. | °C. | Perct. |  | Km. p. h. | 0-10. |  |  | mm. |  |
| 1 | 753.36 | 27.7 | 31.6 | 25.1 | 81.7 | NE quad. | 17.1 | 9.3 | Ci. E | Cu.-N. NE | 5.4 | ● a. |
| 2 | 52.17 | 28.3 | 33.2 | 25.2 | 71.8 | SE | 24.2 | 10 | Ci.-S. | S.-Cu. SE | ------ | ● a. |
| 3 | 56. 2 | 28 | 33.6 | 25.1 | 80.8 | SE | 14.5 | 8 | A.-Cu. S | S.-Cu. S | ------ | ϟ p. |
| 4 | 58.59 | 26.6 | 33 | 22.8 | 82.8 | Variable | 13.7 | 6.3 | Ci. NE | S.-Cu. | 44.2 | ◌ a. ⌈ϟ ⊤ ● p. |
| 5 | 59 | 26.7 | 32.4 | 22 | 85.3 | Variable | 10.2 | 2.5 | Ci. E, NE | S -Cu., Cu.-N. | ------ | ≡ a. |
| 6 | 58.74 | 27.6 | 32.3 | 23 | 80.5 | S. NE | 11.3 | .2 | ------ | Cu.-N. | ------ | ⌓ a. |
| 7 | 58.28 | 27.6 | 33.2 | 22.6 | 77.2 | Variable | 11.4 | 0 | ------ | ------ | ------ | ⌓ a. |
| 8 | 57.67 | 28.3 | 33.4 | 23.3 | 78 | NE | 11.4 | 0 | ------ | ------ | ------ | ∞ a. |
| 9 | 57.18 | 28 | 32.7 | 24.6 | 81.8 | N quad. | 17.7 | 2.3 | Ci.-S. | Cu.-N. NW | ------ | ∞ a. ϟ p. |
| 10 | 57.22 | 27.7 | 33.2 | 23.3 | 80.5 | Variable | 16.9 | 5.3 | Ci. E | Cu.-N. W | ------ |  |
| 11 | 57.50 | 28.4 | 34.7 | 24.1 | 79.3 | Variable | 12.2 | 7.2 | Ci. E | Cu.-N. W | ------ | ϖ ϟ p. |
| 12 | 58 | 28.2 | 32.4 | 24.6 | 79.3 | NE. SE | 11.5 | 10 | Ci.-S. E, N | Cu.-N. | 18 | ⊤ ⊕ a. ϖ a. p. |
| 13 | 56.15 | 26.6 | 31.3 | 23.4 | 87.7 | NW quad. | 16 | 7 | Ci.-S. E | Cu.-N. NE | 57.6 | ⌒ a. ● a. p. |
| 14 | 47.76 | 26.6 | 29.6 | 24.9 | 90.5 | NE quad. | 33.5 | 10 | ------ | N. N, NE | 36.1 | ● ↙° a. p. |
| 15 | 43 | 24.1 | 28.3 | 22.1 | 88.8 | S | 37.8 | 10 | ------ | S -Cu. S | 47.2 | ● ↙° a. ↙ p. |
| 16 | 48.85 | 23.6 | 25.7 | 22 | 91.3 | S | 17.7 | 10 | ------ | S.-Cu. SW | 18.9 | ● a. p. |
| 17 | 53.12 | 25.2 | 29.6 | 22.9 | 87.5 | S, SW | 8 | 10 | ------ | S.-Cu. S | ------ |  |
| 18 | 54.34 | 25.2 | 31.9 | 23.1 | 91 7 | SW | 6.9 | 8.5 | A.-Cu. S | S.-Cu. SW | 19 | ● ⊤ p. |
| 19 | 54.84 | 26 | 31.6 | 23.1 | 88.5 | SW | 9.8 | 9 | A.-Cu. | S.-Cu. S, N | 9.4 | ⊤ ϟ ● p. |
| 20 | 55.13 | 26.7 | 31.2 | 23.9 | 86.5 | Variable | ------ | 5 | Ci.-S. SW | S.-Cu., Cu.-N. | ------ | ⊤ ϟ p. |
| 21 | 53.58 | 27.2 | 32.2 | 23.9 | 78.5 | S | ------ | 7.5 | Ci. S | S.-Cu. SE | ------ | ⊤ p. |
| 22 | 52.26 | 27.8 | 31.7 | 24 | 79 | SW | 9.2 | 1.8 | A.-Cu. SE | S.-Cu., Cu.-N. | ------ | ϟ p. |
| 23 | 50 88 | 27.4 | 32.2 | 23.6 | 84.7 | SW quad. | 8.5 | 6.8 | A.-Cu., Ci. SE | S -Cu. S | 53.1 | ⌈ϟ ● p. |
| 24 | 50.41 | 26.5 | 30.6 | 24 | 86.5 | S | 13.9 | 9.2 | ------ | S.-Cu. S | 1.1 | ⌒ a. ● a. p. |
| 25 | 49.62 | 27 | 31.2 | 23.1 | 84.8 | SW | 14.1 | 7.5 | A.-Cu. S | S.-Cu. SW | 16.2 | ● a. p. |
| 26 | 52.14 | 27.1 | 31.6 | 23.5 | 86.5 | SE quad. | 10.3 | 8.5 | A.-Cu. SW | S.-Cu. SW, S | .8 | ⌒ a. ϟ ●° p. |
| 27 | 56.12 | 27.2 | 32.3 | 24.8 | 86.5 | S quad. | 11 | 9.2 | A.-Cu. S | Cu -N. E | 75.4 | ⊤ ●² ⌈ϟ ϟ p. |
| 28 | 57.33 | 27.1 | 30.7 | 23.9 | 86 | Variable | 8.6 | 8.7 | Ci.-S., Ci. E | S -Cu., Cu.-N. SW, NE | ------ | ● ○ a. ϟ p. |
| 29 | 56.26 | 27.8 | 32.6 | 24.5 | 82.7 | S, NE | 8.4 | 3.5 | Ci. E | Cu. S | ------ | ϟ p. |
| 30 | 55.50 | 28.2 | 32.6 | 24.6 | 80.8 | N quad. | 9.6 | 4 | Ci., Ci.-S. E, SE | Cu.-N. | .5 | ○ ϖ p. |
| 31 | 52.61 | 26.3 | 28.5 | 24 | 91 | NW | 30.9 | 9.2 | ------ | N. N quad. | 103.7 | ●² a. p. |
| Mean | 754.32 | 27 | 31.6 | 23.7 | 83.8 | ------ | 14.7 | 6.7 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 506.6 |  |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 33.6 | 22 | 96 | 71 | 10 | 10 | 1.3 | ○° a. ⌣° p. |
| 2 | 30.9 | 22.5 | 90 | 69 | 10 | 10 | 1.2 | ●° a. d p. |
| 3 | 33.1 | 22.6 | 93 | 71 | 10 | 7 | 3.3 | d° a. d² ● p. |
| 4 | 32.2 | 21.1 | 97 | 66 | 3 | 6 | 13.2 | ⌓² ≡ a. |
| 5 | 31.4 | 21.5 | 97 | 81 | 10 | 10 | 11.2 | ●² d° a. ● p. |
| 6 | 29.9 | 22.2 | 89 | 90 | 10 | 10 | 22.9 | ● a. p. d² p. |
| 7 | 30.5 | 21.9 | 93 | 83 | 9 | 10 | 14.4 | ⌈↯° a. ● a. p. |
| 8 | 33.5 | 20.5 | 96 | 78 | 1 | 8 | ------ | ⌓ ≡° a. |
| 9 | 34.7 | 20.6 | 96 | 63 | 2 | 6 | ------ | ⌓² ≡° a. d² p. |
| 10 | 33.5 | 21.3 | 96 | 67 | 6 | 10 | ------ | ⌓ d° a. ●° ⌣° p. |
| 11 | 34.1 | 22.8 | 92 | 59 | 6 | 9 | 13.5 | ○ ⌣° p. |
| 12 | 29.9 | 22.4 | 90 | 83 | 10 | 10 | 3 | ●² d a. d° ⌣ p. |
| 13 | 33.2 | 23 | 91 | 69 | 10 | 10 | ------ | d C° a. |
| 14 | 33.8 | 23.7 | 85 | 63 | 9 | 9 | ------ | ○° ↯ p. |
| 15 | 33.4 | 24.5 | 75 | 62 | 9 | 8 | ------ |  |
| 16 | 33.6 | 24.2 | 90 | 57 | 10 | 6 | ------ |  |
| 17 | 32.6 | 23.5 | 89 | 67 | 4 | 9 | ------ | ↯° p. |
| 18 | 32.9 | 23.1 | 88 | 72 | 6 | 7 | ------ | ⌓ a. |
| 19 | 33.2 | 24 | 90 | 73 | 9 | 7 | ------ |  |
| 20 | 34.2 | 24.4 | 92 | 63 | 6 | 4 | ------ |  |
| 21 | 33.9 | 24.8 | 91 | 64 | 8 | 7 | ------ |  |
| 22 | 33.7 | 25 | 89 | 72 | 9 | 5 | ------ |  |
| 23 | 33.2 | 25.1 | 86 | 61 | 10 | 10 | ------ | ○ a. |
| 24 | 33.5 | 25.1 | 90 | 75 | 10 | 10 | ------ |  |
| 25 | 32.9 | 24.7 | 91 | 63 | 4 | 2 | ------ |  |
| 26 | 33.4 | 24.5 | 90 | 66 | 2 | 3 | ------ | ↯° p. |
| 27 | 33 | 23.6 | 92 | 70 | 5 | 10 | ------ | ○ a. p. ⊤° d ↯ p. |
| 28 | 33.4 | 23 | 93 | 92 | 10 | 10 | 7.5 | ● a. p. |
| 29 | 29.1 | 21.8 | 93 | 91 | 6 | 10 | 12.2 | ● a. p. ⌈↯° p. |
| 30 | 33.4 | 21.5 | 95 | 64 | 10 | 8 | ------ | d° p. |
| 31 | 32 | 22.1 | 88 | 73 | 8 | 8 | ------ | ↯° p. |
| Mean | 32.8 | 23 | 91.1 | 70.9 | 7.5 | 8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 101 |  |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 30.3 | 22.5 | 96 | 78 | 9 | 9 | ------ | ⌓ a. |
| 2 | 31.5 | 21.9 | 96 | 70 | 1 | 5 | ------ | ⌓ a. |
| 3 | 31.8 | 22.3 | 96 | 71 | 10 | 6 | ------ | ⌓ a. |
| 4 | 31.8 | 22.5 | 95 | 78 | 10 | 4 | ------ | ⌓ a. ⊤ ↯ p. |
| 5 | 29.8 | 24 | 92 | 75 | 10 | 10 | ------ |  |
| 6 | 30.9 | 23.4 | 93 | 75 | 10 | 10 | 17.8 | ⌓ a. ⌈↯ ● p. |
| 7 | 28.8 | 22.5 | 97 | 92 | 10 | 10 | 15 | ● a. p. |
| 8 | 30.8 | 21.3 | 97 | 76 | 1 | 4 | ------ | ⌓ a. |
| 9 | 31.8 | 21.8 | 95 | 76 | 1 | 5 | ------ | ⌓ a. ⊖ p. |
| 10 | 30.8 | 22.5 | 97 | 83 | 10 | 9 | ------ | ⌓ a. ⊤ p° p. |
| 11 | 31.3 | 22 | 97 | 75 | 3 | 10 | 5.1 | ⌓ a. ● ⌣ p. |
| 12 | 29.7 | 21.5 | 96 | 92 | 10 | 10 | 10.2 | ● a. d a. p. |
| 13 | 30.3 | 22.5 | 96 | 88 | 10 | 10 | 4.3 | ⌓ ⊤ a. |
| 14 | 30.8 | 22.8 | 96 | 75 | 10 | 10 | ------ | ● a. |
| 15 | 30.8 | 25 | 84 | 77 | 10 | 10 | ------ |  |
| 16 | 30.8 | 21 | 96 | 71 | 10 | 6 | ------ | ⌓ a. |
| 17 | 31.8 | 21 | 96 | 68 | 1 | 6 | ------ | ⌓ a. |
| 18 | 31.8 | 21.5 | 96 | 71 | 1 | 10 | ------ | ⌓ a. |
| 19 | 32.3 | 22.4 | 93 | 65 | 0 | 6 | ------ | ⌓ a. |
| 20 | 31.8 | 22.2 | 94 | 69 | 10 | 4 | ------ | ⌓ a. |
| 21 | 30.8 | 21.5 | 95 | 65 | 2 | 4 | ------ | ⌓ a. |
| 22 | 31.8 | 21.4 | 91 | 70 | 3 | 5 | ------ |  |
| 23 | 31.8 | 21.8? | 92 | 67 | 10 | 10 | ------ | ⊤° p. |
| 24 | 31.8 | 22.2? | 77 | 61 | 10 | 10 | ------ |  |
| 25 | 33 | 21.5 | 97 | 60 | 0 | 9 | ------ | ⌓° a. |
| 26 | 32.3 | 21.9 | 96 | 71 | 1 | 4 | 5 | ⌓ a. |
| 27 | 29.3 | 22.5 | 96 | 78 | 10 | 10 | 17.8 | p° a. ⌈↯ p. |
| 28 | 29.5 | 22.5 | 98 | 80 | 4 | 10 | 8.9 | d a. ● p. |
| 29 | 27.7 | 22 | 97 | 88 | 2 | 10 | 32.2 | ⌓ a. ● p. |
| 30 | 31.3 | 22.3 | 93 | 94 | 10 | 10 | 5.1 | d a. ● ⊤ p. |
| 31 | 31.5 | 21.5 | 97 | 69 | 4 | 5 | ------ | ⌓ a. |
| Mean | 31 | 22.2 | 94.4 | 75.1 | 6.2 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 116.9 |  |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 29 | 22.1 | 97 | 78 | 10 | 10 | ------ |  |
| 2 | 28 | 24 | 87 | 97 | 10 | 10 | 10.6 | ● a. d a. p. |
| 3 | 29.9 | 22.5 | 93 | 76 | 10 | 7 | ------ |  |
| 4 | 29.6 | 22.7 | 85 | 78 | 8 | 9 | ------ | d° a. ⌈↯ p. |
| 5 | 30.2 | 23.4 | 80 | 60 | 10 | 9 | ------ |  |
| 6 | 29.1 | 22.5 | 96 | 80 | 9 | 10 | 12.4 | d a. p. ⌈↯ p. |
| 7 | 28.6 | 22.9 | 96 | 83 | 9 | 10 | 4.3 | d ●° p. |
| 8 | 30.2 | 22.4 | 91 | 68 | 3 | 8 | ------ |  |
| 9 | 29.9 | 21.6 | 86 | 67 | 2 | 7 | ------ | ⌓ a. |
| 10 | 30.5 | 23.4 | 85 | 67 | 9 | 6 | ------ |  |
| 11 | 29.2 | 24.5 | 84 | 74 | 9 | 9 | ------ |  |
| 12 | 27.2 | 23.5 | 86 | 72 | 10 | 10 | 10.7 | ● a. d a. p. |
| 13 | 28.5 | 24.8 | 90 | 79 | 10 | 9 | 1 | ⊤° a. |
| 14 | 29.1 | 22.9? | 88 | 86 | 10 | 9 | ------ |  |
| 15 | 29 | 25.9 | 84 | 76 | 9 | 9 | ------ |  |
| 16 | 29 | 22.6 | 87 | 75 | 9 | 9 | ------ |  |
| 17 | 31 | 24.8 | 88 | 63 | 4 | 5 | ------ |  |
| 18 | 30.3 | 23.9 | 88 | 71 | 3 | 9 | ------ |  |
| 19 | 29 | 25.4 | 86 | 78 | 10 | 7 | ------ |  |
| 20 | 30 | 25.3 | 83 | 78 | 8 | 9 | ------ |  |
| 21 | 30.2 | 25.6 | 79 | 74 | 8 | 9 | ------ |  |
| 22 | 30.9 | 25.5 | 83 | 71 | 7 | 3 | ------ |  |
| 23 | 31.6 | 23.9 | 87 | 71 | 9 | 10 | ------ |  |
| 24 | 29.9 | 25.6 | 80 | 74 | 9 | 10 | ------ |  |
| 25 | 31.7 | 23.4 | 90 | 71 | 7 | 4 | ------ |  |
| 26 | 31.9 | 23.4 | 88 | 72 | 7 | 2 | 3 |  |
| 27 | 28.9 | 23.8 | 86 | 77 | 10 | 10 | 2 | ● a. ⌈↯ p. |
| 28 | 28.5 | 23.3 | 89 | 88 | 9 | 10 | 1.3 | ●° p. |
| 29 | 27.5 | 22.9 | 85 | 80 | 9 | 10 | 12.7 | ● a. p. |
| 30 | 28.9 | 22.5 | 89 | 75 | 10 | 9 | 1.3 | ●° p. |
| 31 | 30.6 | 23.9 | 87 | 77 | 8 | 6 | ------ |  |
| Mean | 29.6 | 23.7 | 87.2 | 75.4 | 8.2 | 8.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 59.3 |  |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 31 | 22.1 | 96 | 72 | 6 | 7 | ------ | ⊤ p. |
| 2 | 28.2 | 21.8 | 96 | 82 | 8 | 8 | ------ |  |
| 3 | 31.7 | 22.1 | 98 | 66 | 7 | 5 | ------ |  |
| 4 | 34.2 | 22.2 | 96 | 55 | 5 | 5 | ------ |  |
| 5 | 30.5 | 22.1 | 97 | 71 | 6 | 8 | ------ |  |
| 6 | 32.1 | 21.1 | 93 | 70 | 5 | 6 | 13.7 | ●° p. |
| 7 | 29.2 | 21.3 | 93 | 71 | 8 | 6 | ------ | ⊤ p. |
| 8 | 29.7 | 21.9 | 98 | 84 | 8 | 8 | 1.3 | ●° p. |
| 9 | 32.5 | 21.9 | 94 | 67 | 6 | 5 | ------ |  |
| 10 | 30.2 | 23 | 96 | 83 | 9 | 7 | 18.5 | ● a. |
| 11 | 30 | 22.8 | 96 | 76 | 6 | 5 | ------ | ⊖ p. |
| 12 | 29.8 | 21.9 | 96 | 78 | 8 | 7 | ------ | ⊕ a. |
| 13 | 29.9 | 21.6 | 93 | 72 | 6 | 7 | ------ |  |
| 14 | 31.9 | 21.5 | 97 | 72 | 6 | 5 | ------ |  |
| 15 | 29.9 | 22.5 | 93 | 85 | 5 | 7 | ------ |  |
| 16 | 32.3 | 21.6 | 98 | 65 | 6 | 7 | ------ |  |
| 17 | 31.9 | 21.8 | 97 | 64 | 6 | 7 | ------ |  |
| 18 | 32 | 21.5 | 97 | 66 | 5 | 6 | ------ |  |
| 19 | 30.4 | 22.8 | 97 | 70 | 8 | 7 | ------ |  |
| 20 | 31.2 | 22.9 | 96 | 70 | 8 | 6 | ------ |  |
| 21 | 33.7 | 22.2 | 93 | 61 | 5 | 7 | ------ |  |
| 22 | 32 | 22.4 | 93 | 66 | 5 | 6 | ------ |  |
| 23 | 31.5 | 23.4 | 92 | 66 | 5 | 5 | ------ |  |
| 24 | 31.4 | 24.3 | 93 | 64 | 6 | 6 | ------ |  |
| 25 | 32.3 | 23.6 | 94 | 72 | 5 | 7 | ------ |  |
| 26 | 32.5 | 23.4 | 95 | 70 | 6 | 6 | 22.1 | ● p. |
| 27 | 29.2 | 23.5 | 96 | 85 | 7 | 8 | 36.8 | ● a. ●² ⌈↯ p. |
| 28 | 29.2 | 22 | 97 | 78 | 7 | 9 | ------ |  |
| 29 | 29.5 | 21.5 | 98 | 76 | 5 | 8 | 15.5 | ● p. |
| 30 | 30.7 | 21.6 | 96 | 78 | 8 | 7 | ------ |  |
| 31 | 32.1 | 21.8 | 97 | 70 | 6 | 5 | ------ |  |
| Mean | 31.1 | 22.3 | 95.5 | 71.8 | 6.4 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 107.9 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.6 | 23.7 | 96 | 63 | 10 | 7 | 0.8 | ⊕ ● ☇ p. |
| 2 | 31.9 | 23.6 | 94 | 70 | 10 | 8 | ------ | Ω a. ●° p. |
| 3 | 30 | 23.3 | 95 | 71 | 10 | 10 | 1 | Ω a. d° a. p. |
| 4 | 29 | 23.6 | 94 | 77 | 9 | 9 | 1 | ● a. p ☇ ⊤ p. |
| 5 | 30.5 | 23.1 | 97 | 70 | 7 | 9 | 11.2 | ● a. p. ⌒ ☇ ⊤ p. |
| 6 | 29.9 | 22.6 | 97 | 75 | 8 | 7 | ------ | Ω$^2$≡ a. ⛈$^2$ ●° p. |
| 7 | 32.6 | 23.7 | 92 | 66 | 7 | 9 | .5 | Ω$^2$ a. ⊤ ☇ ● p. |
| 8 | 33 | 22.9 | 97 | 75 | 7 | 9 | ------ | ⛈ d° p. |
| 9 | 31.6 | 22.5 | 92 | 65 | 8 | 8 | ------ | Ω$^2$ a. |
| 10 | 31.5 | 23.6 | 95 | 60 | 9 | 7 | ------ | Ω ≡° ○° a. ○ p. |
| 11 | 29.8 | 22.5 | 94 | 59 | 9 | 10 | ------ | Ω a. |
| 12 | 28.3 | 25 | 82 | 63 | 10 | 10 | ------ | p a. ↙° ●° p. |
| 13 | 29.5 | 23 | 92 | 61 | 10 | 10 | .3 | ●° a. |
| 14 | 33.6 | 22.8 | 91 | 42 | 10 | 7 | ------ | p Ω ⊕ a. |
| 15 | 33.5 | 22.6 | 84 | 54 | 8 | 5 | ------ | Ω a. p° ⛈ p. |
| 16 | 32.8 | 23.1 | 90 | 46 | 7 | 5 | ------ | Ω a. |
| 17 | 33 | 24.4 | 91 | 50 | 9 | 7 | ------ | Ω a. |
| 18 | 31.1 | 23.2 | 88 | 65 | 7 | 10 | ------ | ↙° a. p. ↙ ☇ p. |
| 19 | 32 | 24.3 | 88 | 59 | 8 | 8 | ------ | Ω° a. ↙° p. |
| 20 | 32.3 | 25.4 | 87 | 58 | 9 | 6 | ------ | Ω° a. ⊤° p. |
| 21 | 32.7 | 24 | 91 | 65 | 7 | 9 | ------ | Ω° a. d° ●° p. |
| 22 | 34 | 23.6 | 87 | 55 | 7 | 8 | ------ | Ω a. ☇ ⊤ p. |
| 23 | 32.7 | 24.2 | 87 | 68 | 7 | 8 | ------ | ⊕ a. p. p ☇ p. |
| 24 | 34.6 | 24.1 | 86 | 47 | 7 | 7 | ------ | Ω a. ⊤ ☇ p. |
| 25 | 34.6 | 24.7 | 87 | 55 | 2 | 3 | ------ | Ω a. ⊤ ☇ p. |
| 26 | 33.7 | 24.6 | 92 | 55 | 7 | 5 | ------ | Ω° a. ⊤ ☇ p. |
| 27 | 29.6 | 25.6 | 91 | 75 | 10 | 10 | 6.4 | Ω a. ●° a. p. ⊤ p. |
| 28 | 27.7 | 23 5 | 97 | 79 | 10 | 10 | 31 | ●$^2$ a p. |
| 29 | 28.1 | 22.8 | 96 | 78 | 10 | 10 | 10.9 | Ω p a. ● p. |
| 30 | 30.5 | 23.4 | 97 | 64 | 10 | 8 | 2.5 | Ω a. ⛈ ⌒ ● p. |
| 31 | 31.6 | 23.5 | 94 | 55 | 9 | 7 | ------ | Ω a. ⊤ ☇ p. |
| Mean | 31.6 | 23.6 | 91.6 | 62.7 | 8.3 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 65.6 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.5 | 22.9 | 87 | 72 | 10 | 10 | 3.2 | ☇ ●° a. ⛈ d$^2$ p. |
| 2 | 31.5 | 22.5 | 87 | 74 | 10 | 10 | ------ | ☇° Ω$^2$ a. d p. |
| 3 | 30.5 | 22.4 | 86 | 75 | 10 | 10 | ------ | Ω a. ☇$^2$ p. |
| 4 | 30.8 | 24.2 | 89 | 75 | 10 | 10 | 5.1 | d a p. Φ$^2$ ⛈ p. |
| 5 | 31 | 23.2 | 88 | 69 | 10 | 10 | 2.5 | ●d° a. ○° ●° ⌒° p |
| 6 | 30.7 | 23.8 | 88 | 75 | 10 | 10 | 19.6 | d$^2$ ⌒$^2$ ○ a. ψ$^2$ ☇ p. |
| 7 | 30.6 | 23.3 | 92 | 76 | 10 | 10 | 17.8 | ●$^2$ ⛈ ○$^2$ a. ☇ ψ$^2$ |
| 8 | 32.6 | 22.8 | 84 | 57 | 10 | 10 | ------ | Ω a. ☇ p. |
| 9 | 32.8 | 21.6 | 83 | 64 | 4 | 4 | ------ | Ω a. ○ ψ Φ$^2$ p. |
| 10 | 33 | 21.6 | 72 | 62 | 10 | 10 | ------ | Ω a. ψ p. |
| 11 | 34.1 | 22.8 | 83 | 57 | 10 | 10 | 3 | Ω a. ○° p. |
| 12 | 30.8 | 23.8 | 76 | 65 | 10 | 10 | 16 | ●° a. ● p. |
| 13 | 28.8 | 22.6 | 85 | 86 | 10 | 10 | 9.7 | ●° a. p. |
| 14 | 31.3 | 22.8 | 73? | 70 | 10 | 10 | ------ | |
| 15 | 32 | 24.8 | 82 | 63 | 10 | 10 | 5.7 | ⛈° a. ○ ☇° d° p. |
| 16 | 32.2 | 25 | 77 | 50 | 10 | 10 | 1 | ●° p. |
| 17 | 33 | 24.2 | 81 | 52 | 10 | 10 | 8.6 | ☇° p. |
| 18 | 30.6 | 23.2 | 76 | 71 | 10 | 10 | ------ | d$^2$ ⌒ a. d p. |
| 19 | 31.3 | 23.9 | 82 | 66 | 10 | 10 | 3 | ⊤ a. d a. p. ☇ p. |
| 20 | 32.1 | 22.8 | 92 | 67 | 10 | 10 | ------ | ●° ⊤° a. d$^2$ ⛈ p. |
| 21 | 33.5 | 23.8 | 83 | 59 | 10 | 10 | ------ | ⛈ a. ☇ p. |
| 22 | 32.2 | 23.3 | 76 | 62 | 10 | 10 | ------ | Ω a. |
| 23 | 32 | 23.8? | 77 | 59 | 10 | 10 | 9.6 | ● a. p. ☇° p. |
| 24 | 31.4 | 22.8? | 70 | 63 | 10 | 10 | .8 | ☇° p. |
| 25 | 32.8 | 23.2 | 86 | 57 | 10 | 10 | ------ | ●° a. ⌒° ☇° p. |
| 26 | 34.1 | 24.2 | 81 | 59 | 10 | 10 | ------ | Ω a. |
| 27 | 31.2 | 23.5 | 82 | 79 | 10 | 10 | ------ | Ω a. d ☇° p. |
| 28 | 30.2 | 24 | 88 | 74 | 10 | 10 | 22.3 | d a. ● ⛈° p. |
| 29 | 30.4 | 22.6 | 91 | 89 | 10 | 10 | 11.9 | d$^2$ a. ●° p. |
| 30 | 28 | 22.9 | 94 | 81 | 10 | 10 | 26.3 | d a. ● a p. |
| 31 | 31 | 22.6 | 86 | 60 | 10 | 10 | ------ | d$^2$ a. ψ° ☇° p. |
| Mean | 31.5 | 23.3 | 83.1 | 67.4 | 9.8 | 9.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 166.1 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31 | 25 | 88 | 72 | 8 | 6 | 8.1 | ● a. ⌒° ●° p. |
| 2 | 30.8 | 25.1 | 94 | 77 | 8 | 8 | 1.3 | ● ○ a. ○ d ∞ p. |
| 3 | 30.7 | 25.1 | 88 | 72 | 7 | 5 | 20.4 | ○° a. d° p. |
| 4 | 31.8 | 23.6 | 93 | 71 | 2 | 3 | 4.6 | ●° ⌒° a. p. Φ° p. |
| 5 | 32.3 | 24.6 | 87 | 65 | 5 | 6 | .8 | ●° a. ○° a. p. |
| 6 | 32.3 | 24.2 | 88 | 65 | 6 | 6 | 10.7 | ○° a. p. p$^2$ p. |
| 7 | 32.4 | 24.5 | 97 | 68 | 6 | 6 | 42.7 | ○° a. ⌒° d° p. |
| 8 | 30.4 | 23.6 | 98 | 79 | 10 | 8 | 35.8 | ● a. p. |
| 9 | 26.8 | 23.7 | 95 | 92 | 10 | 10 | 12.7 | ● a. p. |
| 10 | 29.4 | 23.4 | 92 | 100 | 7 | 10 | 84.8 | ●$^2$ a. ● p. |
| 11 | 27.1 | ------ | 97 | 85 | 8 | 10 | 1.8 | ● a. d° p. |
| 12 | 27.4 | 23.3 | 91 | 98 | 8 | 10 | 10.7 | ● a. p. |
| 13 | 29.7 | 23.5 | 91 | 77 | 10 | 10 | 4.4 | d° a. ⌒° p. |
| 14 | 30.8 | 23.5 | 83 | 75 | 8 | 9 | 42.5 | ● ⌒° d° a. p. |
| 15 | 26 | 23 | 100 | 95 | 10 | 10 | 41.4 | ⛈ ●$^2$ a. d p. |
| 16 | 27.4 | ------ | 88 | 98 | 10 | 10 | 103.4 | d ●$^2$ a. p. |
| 17 | 27.4 | ------ | 96 | 89 | 10 | 10 | 23.6 | ● d a. p. |
| 18 | 27.2 | ------ | 98 | 95 | 10 | 10 | 319.3 | ● a. ⊤ d ☇$^2$ ●$^2$ p. |
| 19 | 26.6 | ------ | 99 | 96 | 10 | 10 | 22.1 | ☇ ●$^2$ a. ↙° a. p. d |
| 20 | 27.6 | ------ | 96 | 94 | 10 | 10 | 19.8 | ● a. p. |
| 21 | 29.6 | 24.2 | 84 | 82 | 9 | 6 | 2.5 | p a. |
| 22 | ------ | ------ | 90 | ------ | 8 | 8 | 23.1 | ● a. p. ☇ p. |
| 23 | 27.6 | ------ | 97 | 87 | 10 | 10 | 72.9 | d ⛈ ●$^2$ a. ☇ p. |
| 24 | 26.5 | ------ | 95 | 98 | 10 | 10 | 49.8 | ⛈ ●$^2$ a. ● d p. |
| 25 | 29.8 | ------ | 95 | 74 | 9 | 8 | 27 | ○ a. ● d p. |
| 26 | 27.8 | ------ | 94 | 95 | 9 | 10 | 108 | d a. p. ● p. |
| 27 | 28.2 | ------ | 98 | 86 | 10 | 9 | 16.5 | ● a. |
| 28 | 27.8 | ------ | 97 | 90 | 9 | 9 | 9.1 | ● a. p. |
| 29 | 30.5 | 24.5 | 97 | 83 | 9 | 6 | 18 | d a. p. ● p. |
| 30 | 30.2 | ------ | 94 | 72 | 4 | 4 | 1 | d a. |
| 31 | 27.6 | ------ | 82 | 87 | 8 | 10 | 23.4 | ● ⛈ a. p. |
| Mean | 29 | 24 | 93 | 83.9 | 8.3 | 8.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1162.2 | |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.8 | 23.7 | 93 | 82 | 10 | 10 | ------ | d a. |
| 2 | 31.6 | 23.7 | 93 | 84 | 10 | 10 | ------ | d ☇ ψ p. |
| 3 | 31.7 | 24.4 | 92 | 77 | 10 | 10 | ------ | |
| 4 | 29.8 | 24.3 | 92 | 81 | 10 | 10 | 17.3 | d ☇ p p. |
| 5 | 29.6 | 24.2 | 90 | 86 | 10 | 10 | ------ | ☇$^2$ p. |
| 6 | 30.1 | 23.4 | 90 | 81 | 10 | 10 | ------ | |
| 7 | 31.5 | 23.6 | 93 | 85 | 8 | 7 | 41.7 | ⊤ d ⛈ ●$^2$ p. |
| 8 | 31.4 | 23.4 | 95 | 83 | 10 | 10 | ------ | ψ ☇ p. |
| 9 | 35 | 24.6 | 92 | 68 | 10 | 4 | ------ | ψ Φ ☇ p. |
| 10 | 33.4 | 24.2 | 84 | 71 | 10 | 10 | ------ | ψ$^2$ Φ p. |
| 11 | 33.5 | 24.2 | 87 | 69 | 10 | 10 | 45.2 | d ●$^2$ ⛈$^2$ p. |
| 12 | 32.4 | 23.5 | 96 | 85 | 10 | 10 | 67.3 | d a. ●$^2$ ⛈$^2$ p. |
| 13 | 29.4 | 23.6 | 90 | 81 | 10 | 10 | ------ | d a. ↙° ☇$^2$ p. |
| 14 | 29.8 | 23.4 | 92 | 85 | 10 | 10 | ------ | ↙° p. |
| 15 | 30.3 | 24.5 | 86 | 84 | 10 | 10 | ------ | ↙° p. |
| 16 | 30.4 | 25 | 87 | 81 | 10 | 10 | ------ | |
| 17 | 30.3 | 24.6 | 86 | 80 | 10 | 10 | ------ | |
| 18 | 32.4 | 24.6 | 87 | 78 | 10 | 10 | 23.9 | ☇ d° ●$^2$ ↙° p. |
| 19 | 31.5 | 23.5 | 95 | 80 | 10 | 10 | 40.1 | ↙° ●$^2$ ⊤$^2$ ☇ p. |
| 20 | 30.8 | 23.6 | 93 | 84 | 10 | 10 | ------ | |
| 21 | 30 | 23.5 | 88 | 82 | 10 | 10 | 24.1 | d ↙° ●$^2$ ⛈ p. |
| 22 | 30.6 | 22.3 | 91 | 84 | 10 | 10 | 54.3 | d a. p. ●$^2$ ⊤ p. |
| 23 | 30.4 | 23.4 | 92 | 77 | 10 | 10 | 26.4 | ●$^2$ a. ↙° ● ⛈ p. |
| 24 | 30.4 | 23.3 | 91 | 81 | 10 | 10 | ------ | |
| 25 | 30.4 | 23.2 | 90 | 83 | 10 | 10 | ------ | |
| 26 | 32 | 24.4 | 92 | 86 | 10 | 10 | ------ | d p. |
| 27 | 29.4 | 24.3 | 86 | 88 | 10 | 10 | ------ | |
| 28 | 28.3 | 22.2 | 93 | 85 | 10 | 10 | 105.5 | ⊤ ●$^2$ a. ●$^2$ ⛈ p. |
| 29 | 28.6 | 22 | 93 | 74 | 10 | 10 | 23.6 | d a. d$^2$ ⊤ ☇ ● p. |
| 30 | 30 | 23.6 | 88 | 86 | 10 | 10 | 23.9 | d ⊤$^2$ ● p. |
| 31 | 29.8 | 23.6 | 95 | 80 | 10 | 10 | ------ | ☇ Φ$^2$ p. |
| Mean | 30.9 | 23.7 | 90.7 | 81 | 9.9 | 9.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 493.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 26.9 | 22.4 | 96 | 93 | 10 | 10 | 29.7 | d ● a. p. |
| 2 | 26.9 | 23.1 | 89 | 95 | 10 | 10 | 54.6 | ↙° ●² a. d ● p. |
| 3 | 32.2 | 23 | 93 | 79 | 10 | 7 | ------ |  |
| 4 | 31.8 | 22.5 | 90 | 73 | 9 | 9 | 1.3 | Ω² a. ⊤ ● ☇ p. |
| 5 | 29.7 | 23.1 | 91 | 81 | 10 | 10 | .8 | ● a. |
| 6 | 31.8 | 23 | 90 | 88 | 4 | 10 | 1.5 | Ω² a. ● ⊤ ☇ p. |
| 7 | 32.8 | 22.8 | 91 | 86 | 8 | 10 | 8.4 | Ω² a. ● ⊤ ☇ p. |
| 8 | 31.8 | 23.1 | 95 | 79 | 10 | 9 | 1.3 | d a. p. ☇ p. |
| 9 | 32.3 | 23 | 91 | 75 | 5 | 3 | 3.8 | ●° p. |
| 10 | 32.1 | 23 | 89 | 74 | 10 | 8 | ------ |  |
| 11 | 32.3 | 24 | 91 | 77 | 9 | 10 | 81.5 | Ω² a. ●² ☈ p. |
| 12 | 27.2 | 22.5 | 98 | 92 | 10 | 10 | 25.6 | d ⊤ a. ● p. |
| 13 | 27.4 | 23 | 89 | 86 | 10 | 10 | 31.3 | d p a. p. ○ p. |
| 14 | 29.8 | 22.9? | 80 | 92 | 10 | 10 | 36.4 | ● ☈ p. |
| 15 | 30.9 | 22.1? | 81 | 76 | 10 | 10 | ------ | ☇ p. |
| 16 | 30.3 | 26.2 | 83 | 84 | 10 | 10 | .5 | Ω p a. ☇ d² p. |
| 17 | 31.3 | 26.9 | 85 | 80 | 9 | 6 | 33 | ● ☇ p. |
| 18 | 29.3 | 22.6 | 96 | 78 | 10 | 10 | 46.8 | ∞ a. ● a. p. |
| 19 | 28.8 | 22.2 | 96 | 84 | 10 | 10 | 5 8 | ⊤° ● a ● d p. |
| 20 | 31.8 | 22.6 | 92 | 81 | 10 | 10 | 70.4 | ● a. d ●² ☈ p. |
| 21 | 30.8 | 22.5 | 92 | 89 | 10 | 10 | 13.7 | ● a. d ⊤° ● ☇ p. |
| 22 | 31.4 | 22.8 | 95 | 85 | 10 | 10 | 23.9 | ⊤ ● ☈ p |
| 23 | 29.8 | 22.5 | 96 | 85 | 10 | 10 | 57.1 | ∞² a. ●² ☈ p. |
| 24 | 29.7 | 22.4 | 96 | 92 | 10 | 10 | 43.4 | ● ⊤ a. ●² ☈ p. |
| 25 | 30.3 | 22.5 | 93 | 88 | 10 | 10 | 9.9 | ● ☇ p. |
| 26 | 30.8 | 23.4 | 96 | 84 | 10 | 9 | 9.4 | ● a. p. ☇ p. |
| 27 | 31.7 | 22.7 | 92 | 79 | 7 | 10 | 1.5 | ☇ ●° p. |
| 28 | 29.3 | 23.5 | 92 | 93 | 10 | 10 | 8.6 | ● a. ●° p. |
| 29 | 27.8 | 22.5 | 96 | 92 | 10 | 10 | 92.2 | ● a. d ●² p. |
| 30 | 28.8 | 22.5 | 96 | 88 | 10 | 10 | 13.7 | ● a. d² ○ ● p. |
| 31 | 27.9 | 23.4 | 96 | 92 | 10 | 10 | 30.5 | ● a. p. |
| Mean | 30.2 | 23.1 | 91.8 | 84.5 | 9.4 | 9.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 736.6 |  |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 28.2 | 23.7 | 88 | 88 | 10 | 10 | 24.6 | d a ● ↙° p. |
| 2 | 26.7 | 23.5 | 92 | 89 | 10 | 10 | 24.6 | p ↙° a. ●² p. |
| 3 | 32.6 | 24.3 | 95 | 66 | 10 | 8 | ------ |  |
| 4 | 32.3 | 23.2 | 95 | 72 | 8 | 9 | ------ | Ω ≡° a. ☈ p. |
| 5 | 32.2 | 26.8 | 83 | 77 | 10 | 9 | ------ |  |
| 6 | 31.6 | 26 | 87 | 74 | 8 | 7 | ------ | ⌒ a. |
| 7 | 31.8 | 26.2 | 87 | 80 | 8 | 10 | 41.7 | ● p. |
| 8 | 31.6 | 23.2 | 97 | 74 | 10 | 9 | 15.3 | ● a. p. |
| 9 | 32.2 | 23.9 | 97 | 82 | 7 | 7 | 2.8 | ●° d² p. |
| 10 | 32.9 | 24.6 | 98 | 68 | 9 | 7 | .8 | ●° p. |
| 11 | 32.6 | 24 | 95 | 66 | 8 | 9 | 13.7 | Ω ≡° a ● p. |
| 12 | 28.8 | 24.7 | 95 | 80 | 10 | 10 | 16.3 | p ⊤ a. ● p. |
| 13 | 27.3 | 23.6 | 95 | 89 | 10 | 10 | 18.3 | ● a. d a. p. |
| 14 | 28.7 | 25.4 | 81 | 88 | 10 | 10 | 17.7 | ⊤° a. ● a. p. |
| 15 | 30.6 | 25.4 | 81 | 75 | 10 | 10 | ------ |  |
| 16 | 29.7 | 24.1 | 88 | 85 | 10 | 10 | 2.1 | ↙° a. ●° ☇ p. |
| 17 | 32.2 | 26.5 | 88 | 76 | 8 | 9 | 34 | ↙° ● p. |
| 18 | 28.8 | 23.8 | 92 | 95 | 9 | 10 | 40.7 | ● ⊤ p. |
| 19 | 26.6 | 23.6 | 94 | 97 | 10 | 10 | 115.9 | ● ⊤ a. ●² p. |
| 20 | 28.6 | 21.8 | 98 | 90 | 10 | 10 | 56.1 | ☈ a. ●² ☈° p. |
| 21 | 28.8 | 24.3 | 97 | 93 | 10 | 10 | 1.3 | ☈ ●° p. |
| 22 | 30.2 | 25.7 | 92 | 86 | 10 | 10 | 36.3 | ● p. |
| 23 | 31.5 | 23.9 | 91 | 81 | 10 | 10 | 92.5 | ☈° ●² p. |
| 24 | 28 | 23.6 | 96 | 89 | 10 | 10 | 8.9 | d a. ● ☈° p. |
| 25 | 30.8 | 24.9 | 87 | 94 | 9 | 10 | 81.5 | d² a. ●² ☈° p |
| 26 | 32.1 | 23.4 | 94 | 77 | 10 | 9 | 14.3 | ●° a. ●² ☇ p. |
| 27 | 32.2 | 23.8 | 96 | 72 | 9 | 9 | 21.6 | ●² p. |
| 28 | 28.4 | 23.9 | 98 | 85 | 9 | 10 | 30.5 | ● a. p. d ☈ p. |
| 29 | 26 | 23 | 93 | 95 | 10 | 10 | 54.7 | ● a. p. |
| 30 | 30.2 | 23.5 | 97 | 86 | 10 | 10 | 2.8 | d ●° p. |
| 31 | 31 | 23.9 | 93 | 81 | 10 | 10 | 20.6 | d ☇ ●² p. |
| Mean | 30.2 | 24.3 | 92.3 | 82.3 | 9.4 | 9.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 789.6 |  |

### GUIUAN.

[$\phi$=11° 03′ N; $\lambda$=125° 43′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | ------ | ------ | ------ | ------ | 10 | 10 | ------ | ⊍² p. |
| 2 | ------ | ------ | ------ | ------ | 10 | 10 | 6.3 | ⊤ a. ●° p. |
| 3 | ------ | ------ | ------ | ------ | 2 | 7 | 4.8 | ⊍ p. |
| 4 | 30.8 | ------ | ------ | ------ | 9 | 8 | 12.7 | ● a. ⊍² p. |
| 5 | 30.7 | 23.4 | 96 | 84 | 10 | 9 | .1 | ● d° a. ⊍² p. |
| 6 | 30.8 | 22.8 | 94 | 74 | 8 | 7 | 6.1 | ⌒ d a. ● ⊍² p. |
| 7 | 30.9 | 22.9 | 98 | 72 | 2 | 6 | 70.6 | d° ⌒ a. ☈ ●² p |
| 8 | 30.4 | 23.2 | 97 | 80 | 8 | 2 | 5.3 | ●° a. ● ⊤ ↙° p. |
| 9 | 31.5 | 22.8 | 98 | 73 | 5 | 1 | ------ |  |
| 10 | 30.7 | 23.3 | 88 | 74 | 9 | 9 | ------ | ○ a. p. ⌒ p |
| 11 | 30.3 | 25.6 | 81 | 73 | 8 | 10 | 2 | ⊤ p. |
| 12 | 27.6 | 24 | 92 | 88 | 10 | 10 | 14.7 | ● a. p. ↙° p. |
| 13 | ------ | ------ | 99 | ------ | 10 | 10 | 1.8 | ● a ↙° a. p. |
| 14 | 29.2 | ------ | ------ | ------ | 10 | 9 | .3 | ↙° ●° p. |
| 15 | 29.8 | 26.4 | 82 | 79 | 7 | 8 | ------ | ○ p. |
| 16 | 30 | 27.2 | 81 | 81 | 8 | 8 | ------ |  |
| 17 | 31 | 27.3 | 84 | 81 | 7 | 6 | 16 | ☈² ●² p. |
| 18 | 29.4 | 23.2 | 83 | 75 | 9 | 9 | ------ | ☇ p. |
| 19 | 29.5 | 25.9 | 82 | 77 | 9 | 10 | 3.6 | d² ☈ ●° p. |
| 20 | 30.3 | 23.4 | 98 | 76 | 8 | 9 | 6.1 | ⊤ ● ☇² ↙° p. |
| 21 | 30.8 | 23.8 | 88 | 74 | 6 | 9 | 10.2 | ● ☈ p. |
| 22 | 30.7 | 22.9 | 87 | 80 | 8 | 8 | ------ | ↙° a. p. |
| 23 | 29.7 | 26.5 | 82 | 71 | 7 | 10 | ------ |  |
| 24 | 30.8 | 27 | 84 | 76 | 9 | 10 | ------ | ☇ p. |
| 25 | 30.4 | 26.9 | 82 | 82 | 7 | 6 | ------ | ○² a. ○° p. |
| 26 | 30.2 | 27.4 | 79 | 83 | 2 | 7 | 5.8 | ○² ● p. |
| 27 | 29.9 | 24.5 | 99 | 80 | 9 | 10 | 17.5 | d° a. ☇ ●° p. |
| 28 | 27.8 | 23.4 | 99 | 94 | 10 | 10 | 4.6 | ● d° a. ●° p. |
| 29 | 28.9 | 24.2 | 92 | 85 | 10 | 9 | 1.3 | d a. ○° p. |
| 30 | 28.6 | 25.9 | 89 | 85 | 9 | 10 | ------ | ⊕ a. ○° p. |
| 31 | 30.4 | 23.6 | 81 | 84 | 9 | 8 | ------ | ⊍² ☇ p. |
| Mean | 30 | 24.7 | 89 | 79.2 | 7.9 | 8.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 189.8 |  |

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 28.5 | 22.8 | 97 | 81 | 10 | 9 | 7.1 | ● a. p. ☇ p. |
| 2 | 29.9 | 22.5 | 99 | 77 | 4 | 7 | ------ | d ☇ p. |
| 3 | 31.2 | 22 | 97 | 72 | 4 | 5 | 19.4 | Ω° ≡° ●° a. ⊍° p. |
| 4 | 31 | 23.5 | 97 | 75 | 5 | 8 | 1.1 | ● ≡ a. ● ⊍ ☇ p. |
| 5 | 30.5 | 23 | 96 | 72 | 5 | 8 | ------ | ≡° a. ☇ ⊍ p. |
| 6 | 31.3 | 22.4 | 98 | 73 | 6 | 6 | 17 | Ω° ≡ d a. ●° ☇ p. |
| 7 | 31.2 | 23 | 97 | 69 | 3 | 4 | ------ | ● ≡ a. ☇ ⊍° d p. |
| 8 | 32 | 23.4 | 97 | 83 | 7 | 7 | 9.7 | ⊕ a. ● ☇ ⊍° p. |
| 9 | 33.7 | 22.4 | 98 | 74 | 4 | 6 | ------ | ≡ a. ☇ ⊍ p. |
| 10 | 33.5 | 23.5 | 97 | 67 | 5 | 5 | ------ | Ω ≡ d a. ○° ⊍ p. |
| 11 | 33 | 22.7 | 95 | 70 | 4 | 5 | 1.8 | ≡° ○ a. ⊤ ●° ⊍° p |
| 12 | 26.9 | 23.3 | 97 | 92 | 9 | 9 | 32.3 | ● a. p |
| 13 | 26.7 | 22.6 | 90 | 87 | 10 | 9 | 2.6 | ● a. ●° p. |
| 14 | 31 | 24.5 | 91 | 77 | 9 | 6 | 8.2 | ● p. |
| 15 | 32 | 20.7 | 98 | 64 | 4 | 7 | ------ | ≡° a. ⊍ p. |
| 16 | 31.8 | 21.6 | 96 | 88 | 4 | 9 | 3.6 | Ω° ≡° a. ● p. |
| 17 | 33.5 | 22.2 | 96 | 61 | 4 | 5 | ------ | Ω° ≡° a. ☇ p. |
| 18 | 31.8 | 23 | 94 | 62 | 7 | 6 | .5 | Ω ●° a. ○° p. |
| 19 | 32.6 | 24.5 | 81 | 64 | 7 | 6 | ------ | d a. ○ ☇ p. |
| 20 | 32.7 | 22 | 97 | 63 | 7 | 7 | 2.3 | Ω° ○ a. ☇ ●° p. |
| 21 | 33.3 | 22.5 | 97 | 77 | 4 | 8 | 18.3 | ≡ a. ● ☈ p. |
| 22 | 33.5 | 22.4 | 95 | 62 | 6 | 6 | ------ | d a. ⊤ ☇ p. |
| 23 | 31.7 | 23.5 | 79 | 83 | 5 | 7 | .8 | ●° ⊤ ☇ p. |
| 24 | 31.5 | 23.1 | 97 | 80 | 8 | 7 | ------ | ≡ a. |
| 25 | 32.6 | 22.7 | 97 | 66 | 4 | 6 | ------ | Ω ≡ a. |
| 26 | 33.2 | 22.4 | 96 | 72 | 4 | 5 | ------ | Ω ≡° a. |
| 27 | 30.9 | 24.2 | 97 | 79 | 6 | 8 | 17.8 | d ≡ a. d ● ☇ p. |
| 28 | 29.2 | 24.2 | 97 | 81 | 10 | 8 | 8.9 | d° ≡ a. ● a. p. |
| 29 | 28.1 | 23.5 | 97 | 82 | 10 | 8 | 3.3 | ● a. p. |
| 30 | 30.3 | 23.5 | 89 | 71 | 8 | 7 | ------ | ○ p. |
| 31 | 31.5 | 22.8 | 86 | 70 | 6 | 6 | ------ | d a. p. ⊍ p. |
| Mean | 31.3 | 22.9 | 94.7 | 74 | 6.1 | 6.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 154.7 |  |

## METEOROLOGICAL DATA, ETC.—Continued

### MASBATE.

[$\phi$=12° 22′ N ; $\lambda$=123° 36′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 4 | 31.6 | 22.2 | 93 | 73 | 10 | 9 | ------ |  |
| 5 | 30.4 | 25.8 | 90 | 84 | 10 | 10 | 5.3 |  |
| 6 | 31.8 | 25.2 | 88 | 65 | 8 | 8 | ------ |  |
| 7 | 32.6 | 25.5 | 92 | 57 | 8 | 4 | 42.4 |  |
| 8 | 30.4 | 23.4 | 95 | 90 | 7 | 9 | 8.9 |  |
| 9 | 30 | 24.6 | 94 | 77 | 8 | 7 | 11.7 |  |
| 10 | 31 | 26.5 | 81 | 69 | 9 | 9 | ------ |  |
| 11 | 30.6 | 26.4 | 82 | 65 | 10 | 9 | 11.7 |  |
| 12 | 28.2 | 23 | 88 | 92 | 10 | 10 | 37.4 |  |
| 13 | 27 | 23.5 | 87 | 87 | 10 | 10 | 27.4 |  |
| 14 | 27.5 | 22.8 | 83 | 96 | 10 | 10 | 7.9 |  |
| 15 | 30.6 | 23 | 94 | 77 | 10 | 10 | 1.5 |  |
| 16 | 29.2 | 23.5 | 87 | 72 | 10 | 9 | .8 |  |
| 17 | 31 | 25.5 | 93 | 74 | 10 | 9 | 4.1 |  |
| 18 | 29.4 | 23.8 | 84 | 79 | 10 | 10 | 2.8 |  |
| 19 | 29.8 | 24.6 | 86 | 81 | 10 | 9 | ------ |  |
| 20 | 30.8 | 25.8 | 98 | 74 | 8 | 9 | ------ |  |
| 21 | 29.6 | 25.4 | 85 | 80 | 9 | 10 | .3 |  |
| 22 | ------ | 24 | 92 | ------ | 9 | ------ | 2.8 |  |
| 23 | 29.6 | 23.8 | 91 | 83 | 9 | 10 | 11.4 |  |
| 24 | 28.5 | 23.6 | 96 | 84 | 10 | 10 | .3 |  |
| 25 | 30 | 26.4 | 84 | 83 | 9 | 9 | ------ |  |
| 26 | 31.4 | 26.4 | 92 | 81 | 7 | 8 | ------ |  |
| 27 | 32.5 | 25.6 | 90 | 68 | 7 | 8 | ------ |  |
| 28 | 27.5 | 26.6 | 90 | 93 | 10 | 10 | 8.7 |  |
| 29 | 27.6 | 23.6 | 98 | 88 | 9 | 10 | 5.3 |  |
| 30 | 26.6 | 25 | 97 | 89 | 10 | 10 | 45 |  |
| 31 | 28.8 | 25.2 | 89 | 80 | 10 | 10 | ------ |  |
| Mean | 29.8 | 24.7 | 90 | 79.3 | 9.2 | 9.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 235.7[1] |  |

### ROMBLON.

[$\phi$=12° 35′ N ; $\lambda$=122° 16′ E.]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct | 0-10. | 0-10. | mm. |  |
| 1 | 28.4 | 23.2 | 92 | 89 | 10 | 10 | 27.6 | ●² a. ● ↙° p. |
| 2 | 27.9 | 22.8 | 90 | 91 | 10 | 10 | 14 | ●² a. ●° p. |
| 3 | 33.3 | 23.4 | 93 | 64 | 9 | 7 | .3 | Ф° ω° p. |
| 4 | 33.8 | 22.6 | 97 | 68 | 8 | 7 | 6.4 | ●° a. ● p. |
| 5 | 31.1 | 23.4 | 97 | 79 | 9 | 9 | 26.7 | ⌈↯ ● p. |
| 6 | 33.6 | 23.3 | 97 | 65 | 7 | 7 | .5 | ●² a. ⌈↯ ●° p. |
| 7 | 33.4 | 23.4 | 98 | 72 | 8 | 7 | 16 | ⌈↯ ● a < p. |
| 8 | 32.9 | 23.2 | 97 | 78 | 7 | 7 | 2.5 | ● a. d° Ф° < p. |
| 9 | 33.7 | 24 | 91 | 71 | 4 | 4 | .5 | Ω° ●° a. |
| 10 | 33.9 | 26.5 | 83 | 66 | 8 | 7 | ------ | Ф° ω° p |
| 11 | 34.1 | 25.3 | 83 | 63 | 8 | 7 | ------ | Ф° ω° p. |
| 12 | 33.4 | 25 | 83 | 69 | 9 | 9 | 17.8 | ⌈↯ ●° p. |
| 13 | 28.9 | 23.6 | 92 | 82 | 10 | 10 | 48 | ●⌈↯² a ●² a. p. |
| 14 | 29.9 | 22.8 | 88 | 80 | 10 | 10 | 11.1 | ↙° ● a. p. |
| 15 | 32.4 | 24 | 77 | 71 | 10 | 10 | 6.6 | ●° a. |
| 16 | 31.3 | 24.2 | 88 | 73 | 10 | 9 | 1.8 | ● ↙° a |
| 17 | 31.3 | 24.5 | 80 | 80 | 9 | 8 | 16 | ● a p. ⊤ p. |
| 18 | 31.6 | 23.4 | 81 | 71 | 9 | 9 | 1 | ●° p |
| 19 | 31.4 | 23 | 78 | 75 | 10 | 9 | ------ | d° ⌈↯ p. |
| 20 | 31.5 | 24.2 | 83 | 72 | 8 | 9 | .3 | d° a. |
| 21 | 32 | 24.5 | 84 | 81 | 9 | 10 | 1 | d ⌒° a. |
| 22 | 31.4 | 23.7 | 86 | 90 | 10 | 10 | 34.1 | ●° a. ● p. |
| 23 | 29.9 | 23.6 | 90 | 84 | 10 | 10 | 14 | ⊤ ●° a. p d° p. |
| 24 | 30 | 23.4 | 88 | 81 | 10 | 10 | 2.8 | ●° ↙° a p ⌈↯² p. |
| 25 | 31.7 | 23.4 | 83 | 78 | 9 | 10 | 3.3 | ● a. p. ⊤ p. |
| 26 | 33.7 | 24.9 | 84 | 64 | 7 | 6 | .8 | ● p. |
| 27 | 33 | 24.5 | 86 | 67 | 4 | 4 | ------ | < p. |
| 28 | 32.9 | 24.5 | 95 | 84 | 10 | 10 | .3 | < p. |
| 29 | 32.3 | 22.8 | 97 | 74 | 5 | 8 | ------ | d a. ○ p. |
| 30 | 30.3 | 23.7 | 89 | 76 | 8 | 9 | ------ | Ω° a. |
| 31 | 31 | 24.7 | 81 | 90 | 9 | 9 | 10.4 | ●° a. ● p. |
| Mean | 31.8 | 23.9 | 88.1 | 75.7 | 8.5 | 8.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 263.8 |  |

### LAOANG.

[$\phi$=12° 35′ N ; $\lambda$=125° 01′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 26.6 | 22.6 | 98 | 88 | 10 | 10 | 8.2 | ●² ↙° a. |
| 2 | 30 | 22.7 | 96 | 71 | 10 | 7 | 4.1 | ● a. p. |
| 3 | 31 | ------ | 96 | 75 | 5 | 5 | 1.8 | ●° p. |
| 4 | 30 | 22.5 | 96 | 85 | 4 | 7 | 3.3 |  |
| 5 | 29.5 | 22.6 | 96 | 82 | 9 | 9 | 7.6 | ● a. |
| 6 | 30 | 23.1 | 97 | 78 | 8 | 6 | .5 | ● a. |
| 7 | 30 | 23.1 | 97 | 85 | 5 | 6 | 5.1 | ●° a. ● p. |
| 8 | 31 | 23.1 | 96 | 85 | 5 | 7 | 12 | ● p. |
| 9 | 31 | 23.2? | 97 | 72 | 5 | 5 | ------ |  |
| 10 | 31.6 | 24 | 95 | 69 | 6 | 5 | ------ |  |
| 11 | 31 | 25 | 89 | 73 | 8 | 5 | 33 | ↙ p. |
| 12 | 26 | 21.5 | 95 | 96 | 10 | 10 | 65 | ↘ ⊤ ●² a. ● ↙° p. |
| 13 | 25 | 22 | 96 | 99 | 10 | 10 | 63.5 | ● ↙° a. p. |
| 14 | 30 | 21.9 | 97 | 91 | 7 | 7 | 8.2 | ● a. p. |
| 15 | 31.1 | ------ | 96 | 91 | 7 | 8 | 5.1 | ● a. ↙° p. |
| 16 | 30 | 23.5 | 95 | 90 | 5 | 7 | ? | ● a. |
| 17 | ------ | 22.5 | 95 | 72 | 7 | 5 | ------ |  |
| 18 | 32 | 23 | 93 | 65 | 6 | 5 | ------ |  |
| 19 | 30.5 | 24.5 | 87 | 71 | 7 | 7 | ------ |  |
| 20 | 31.4 | 22.5 | 97 | 70 | 8 | 6 | ------ | ↙° p. |
| 21 | 31.3 | 23.5? | 97 | 65 | 4 | 7 | 1 | ●° ↙° p. |
| 22 | 31.5 | 23 | 95 | 68 | 8 | 8 | ------ | ●° a |
| 23 | 30.5 | 23.6 | 87 | 71 | 9 | 9 | 5.6 | ● a. p. |
| 24 | 31.5 | 23.5 | 95 | 84 | 9 | 7 | ------ |  |
| 25 | 31 | 24 | 91 | 67 | 7 | 6 | ------ |  |
| 26 | 33 | 24 | 96 | 60 | 9 | 3 | ------ |  |
| 27 | 32 | 24 | 91 | 72 | 7 | 7 | 14.2 |  |
| 28 | 28.5 | 23.4 | 96 | 85 | 10 | 7 | 59.2 | ●² a. ● p. |
| 29 | 30.1 | 22.5 | 96 | 89 | 10 | 10 | 14.7 | ●² a. ● p. |
| 30 | 32.5 | 23.6 | ------ | 78 | 9 | 9 | .5 | ●° a. p. |
| 31 | 30 | 24.4 | 96 | 70 | 9 | 8 | ? |  |
| Mean | 30.3 | 23.2 | 94.8 | 78 | 7.5 | 7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 312.6? |  |

### GUBAT.

[$\phi$=12° 55′ N ; $\lambda$=124° 08′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 26 | 23.1 | 94 | 87 | 10 | 7 | 30.7 | ↙ a. ● a. p |
| 2 | 30.4 | 24 | 84 | 77 | 10 | 8 | ------ | d° a. p. |
| 3 | 30.1 | 22.9 | 96 | 73 | 9 | 10 | 4.8 | ⊤ p. |
| 4 | 30.4 | 24 | 94 | 77 | 8 | 8 | 2.5 | ●° a. d ω p. |
| 5 | 30.3 | 24 | 97 | 85 | 7 | 10 | 39.1 | d° a. p. ⊤ < p. |
| 6 | 30.3 | 23.5 | 98 | 75 | 8 | 7 | 11.2 | ●² a. |
| 7 | 30.5 | 24.3 | 97 | 71 | 7 | 6 | ------ | ● a. ω° Ф p. |
| 8 | 31.2 | 26.5 | 97 | 69 | 8 | 10 | ------ |  |
| 9 | 32 | 23.6 | 96 | 65 | 7 | 9 | ------ |  |
| 10 | 31.6 | 24.5 | 89 | 69 | 10 | 6 | ------ | d° a ω p. |
| 11 | 32 | 24.5 | 93 | 68 | 8 | 10 | 14 | d ⊤ ● ω p. |
| 12 | 28.3 | 24.3 | 94 | 87 | 6 | 7 | 42.9 | ⊤ d a p < p. |
| 13 | 25.6 | 22.6 | 97 | 94 | 10 | 10 | 71.7 | ⊤ a. ↙° ●² a. p. |
| 14 | 27.6 | 23 | 91 | 78 | 10 | 6 | 2.5 | ● a. ↙° a. p. |
| 15 | 31.4 | 23 | 91 | 65 | 9 | 8 | ------ | d p. |
| 16 | 31 | 24.6 | 76 | 65 | 8 | 8 | 6.1 | ● a. |
| 17 | 33 | 25.5 | 85 | 60 | 8 | 10 | ------ |  |
| 18 | 31.3 | 25.1 | 84 | 67 | 9 | 6 | 2 |  |
| 19 | 31.2 | 24.2 | 95 | 69 | 7 | 6 | ------ | d° a. |
| 20 | 32 | 24.4 | 92 | 63 | 10 | 10 | ------ |  |
| 21 | 32 | 23.6 | 84 | 70 | 10 | 10 | 1.5 | ● p. |
| 22 | 32 | 23.9 | 93 | 71 | 10 | 9 | 8.4 | ● p. |
| 23 | 29.4 | 24.5 | 88 | 78 | 7 | 7 | ------ | d° a. |
| 24 | 29.5 | 24.9 | 88 | 78 | 8 | 8 | ------ |  |
| 25 | 32.9 | 25.3 | 82 | 67 | 8 | 8 | ------ | ⊤ a. |
| 26 | 32.5 | 26.2 | 83 | 66 | 9 | 10 | ------ |  |
| 27 | 33 | 24.5 | 92 | 76 | 10 | 10 | ------ | ⊤ < d p. |
| 28 | 29.8 | 25 | 96 | 94 | 10 | 8 | 3.8 | d a. p. |
| 29 | 26.7 | 24.4 | 97 | 94 | 10 | 10 | 8.6 | d a p. |
| 30 | 28.2 | 24.3 | 95 | 82 | 7 | 7 | 4.6 | ● a. |
| 31 | 30.2 | 24.9 | 88 | 72 | 7 | 7 | ------ | ω d p. |
| Mean | 30.4 | 24.2 | 91.2 | 74.3 | 8.5 | 8.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 254.4 |  |

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[1] 28 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N ; $\lambda$=144° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.6 | 26 | 84 | 71 | 6 | 6 | 2 | |
| 2 | 30.4 | 25.6 | 83 | 67 | 10 | 5 | 3.8 | |
| 3 | 30 | 23.4 | 87 | 76 | 10 | 10 | ------ | |
| 4 | 30.6 | 23.6 | 84 | 71 | 8 | 6 | ------ | |
| 5 | 30.4 | 23.8 | 81 | 71 | 4 | 10 | ------ | |
| 6 | 29 | 24.8 | 87 | 75 | 10 | 10 | 5 | |
| 7 | 30.6 | 24.8 | 84 | 66 | 10 | 10 | 12.7 | |
| 8 | 30.4 | 23.8 | 92 | 74 | 10 | 8 | 45.7 | |
| 9 | 27.2 | 23.4 | 90 | 84 | 10 | 10 | 14 | |
| 10 | 29 | 23 | 89 | 76 | 10 | 10 | 15.2 | |
| 11 | 29 | 23.4 | 92 | 87 | 10 | 10 | 5 | |
| 12 | 29.6 | 25.2 | 87 | 74 | 10 | 10 | 2 | |
| 13 | 29.6 | 25.6 | 89 | 77 | 10 | 10 | 3.8 | |
| 14 | 29.6 | 23.8 | 87 | 68 | 10 | 6 | 2.5 | |
| 15 | 30 | 23.8 | 86 | 71 | 10 | 8 | 1.3 | |
| 16 | 30 | 23.8 | 85 | 68 | 10 | 10 | ------ | |
| 17 | 29.6 | 26.4 | 84 | ------ | 8 | 10 | 11.5 | |
| 18 | 29.6 | 25 | 84 | ------ | 10 | 10 | 6.3 | |
| 19 | 28 | 26.4 | 92 | 86 | 10 | 10 | 15.2 | |
| 20 | 29.4 | 24.4 | 90 | 79 | 10 | 10 | 10.2 | |
| 21 | 29.8 | 24.2 | 90 | 64 | 10 | 10 | 8.9 | |
| 22 | 30.2 | 24 | 86 | 76 | 10 | 10 | 10.2 | |
| 23 | 29.8 | 24.4 | 86 | ------ | 10 | 10 | 3.8 | |
| 24 | 30 | 21.4 | 84 | 74 | 10 | 10 | 1.3 | |
| 25 | 30.2 | 25.6 | 89 | 74 | 6 | 10 | 1.3 | |
| 26 | 30 | 24.8 | 86 | 70 | 10 | 8 | 10.2 | |
| 27 | 30 | 24.8 | 84 | 71 | 4 | 8 | .8 | |
| 28 | 30.6 | 24 | 85 | 65 | 10 | 10 | 43.1 | |
| 29 | 29.6 | 24 | 89 | 76 | 10 | 10 | 2.5 | |
| 30 | 28.4 | 25.2 | 89 | 92 | 10 | 10 | 40.6 | |
| 31 | 26 | 24 | 92 | 95 | 10 | 10 | 81.2 | |
| Mean | 29.6 | 24.5 | 87 | 74.9 | 9.2 | 9.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 360.1 | |

### CALAPAN.

[$\phi$=13° 25′ N ; $\lambda$=121° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29 | 23 | 97 | 80 | 10 | 10 | 40.7 | ≡ a. d ● a. p. |
| 2 | 29 | 23 | 97 | 79 | 10 | 10 | 4.6 | ●° a. d ⊤ p. |
| 3 | 32 | 23.2 | 98 | 70 | 10 | 10 | 4.3 | ●° ⊤ p. |
| 4 | 31 | 22.9 | 97 | 75 | 10 | 10 | .8 | p a. p. ⊤ ↯ p. |
| 5 | 31.2 | 22.4 | 88 | 73 | 10 | 10 | ------ | |
| 6 | 32.5 | 23.2 | 88 | 65 | 10 | 10 | ------ | |
| 7 | 31.7 | 24.9 | 93 | 68 | 10 | 10 | 10.9 | |
| 8 | 32 | 24.1 | 98 | 68 | 10 | 5 | .3 | ●² ⌒° a. ⊤ p. |
| 9 | 31.7 | 23.1 | 89 | 70 | 10 | 10 | ------ | ⊤ p. |
| 10 | 31.6 | 22.8 | 95 | 73 | 10 | 10 | ------ | ⊤ p. |
| 11 | 30.5 | 22.6 | 95 | 76 | 10 | 10 | ------ | ⊤ p. |
| 12 | 30.2 | 23.5 | 91 | 76 | 10 | 10 | 2 | ●° p. |
| 13 | 30.2 | 22.6 | 92 | 71 | 10 | 10 | 19.3 | d² p. |
| 14 | 28.5 | 22.6 | 94 | 100 | 10 | 10 | 28.4 | ●² a. p. ↙° p. |
| 15 | 28.5 | 22.1 | 83 | 77 | 10 | 10 | 9.7 | ⊤ ↯ a. ●° a. p. |
| 16 | 32 | 24 | 83 | 53 | 10 | 10 | 5.6 | d° ●² a. ● p. |
| 17 | 32.7 | 24.8 | 75 | 63 | 10 | 10 | ------ | p° a. p. |
| 18 | 30.3 | 24 | 92 | 82 | 10 | 10 | 1.6 | ●° a. p. |
| 19 | 29.4 | 23 | 93 | 78 | 10 | 10 | .5 | d a. |
| 20 | 30.6 | 22.6 | 94 | 75 | 10 | 10 | 3.8 | ●° a. d° p. |
| 21 | 30 | 22.5 | 98 | 82 | 10 | 10 | 1.3 | d a. ●° p. |
| 22 | 26.7 | 23.4 | 94 | 95 | 10 | 10 | 84.6 | ●° a. p. |
| 23 | 25.6 | 23.1 | 98 | 98 | 10 | 10 | 37 | ●° a. ● p. |
| 24 | 28.6 | 23.4 | 99 | 84 | 10 | 10 | 10.7 | ●² a. ●° Γ↘ p. |
| 25 | 32.5 | 23.4 | 99 | 65 | 10 | 10 | .5 | ⊤ ●° a. |
| 26 | 31.1 | 23.8 | 97 | 75 | 10 | 10 | .8 | p p. |
| 27 | 30.7 | 23.6 | 96 | 93 | 8 | 10 | 5.9 | ⊤ ●² d p. |
| 28 | 31.2 | 23 | 97 | 75 | 10 | 10 | ------ | |
| 29 | 29.6 | 22.9 | 96 | 81 | 10 | 10 | ------ | Γ↘ a. p. |
| 30 | 29.6 | 22.5 | 97 | 80 | 10 | 10 | .8 | d p. |
| 31 | 30.4 | 23 | 98 | 76 | 10 | 10 | 2.3 | d° p. |
| Mean | 30.3 | 23.2 | 93.6 | 76.6 | 9.9 | 9.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 276.4 | |

### VIRAC.

[$\phi$=13° 35′ N ; $\lambda$= 124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.2 | 22.8 | 96 | 90 | 10 | 10 | 84.9 | ↙●² Γ↘² a. ↙°● |
| 2 | 32.3 | 24.6 | 85 | 77 | 10 | 10 | ------ | ● a. |
| 3 | 32.1 | 24.7 | 94 | 69 | 10 | 7 | ------ | |
| 4 | 33 | 23.6 | 96 | 71 | 10 | 9 | 2.5 | d° ⌒ a. ● a. p. |
| 5 | 31.4 | 23 | 96 | 79 | 10 | 10 | ------ | ⊤ a. |
| 6 | 32.5 | 23.2 | 97 | 71 | 9 | 8 | ------ | Ω p° a. |
| 7 | 33.6 | 23 | 95 | 42 | 8 | 5 | ------ | Ω² ⌒ a. p° p. |
| 8 | 33.5 | 23 | 95 | 73 | 5 | 7 | .4 | Ω² a. p° d ⊤ p. |
| 9 | 34 | 23.2 | 95 | 59 | 5 | 4 | ------ | Ω a. |
| 10 | 34 | 24.3 | 92 | 62 | 10 | 10 | ------ | |
| 11 | 34 | 24.6 | 89 | 56 | 10 | 9 | .3 | ψ ⊤ ↯ p. |
| 12 | 29.4 | 23.6 | 86 | 82 | 10 | 10 | 58 | d a. ⊤ ↯ ●² a. p. |
| 13 | ------ | 22.5 | 91 | 97 | 10 | 10 | 137 [1] | ⊤↙°●²a. ↙²●²p. |
| 14 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ● a. p. |
| 15 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ● a. p. |
| 16 | ------ | ------ | ------ | ------ | ------ | ------ | 110.5 [2] | ● a. |
| 17 | 32.6 | 24.6 | 88 | 65 | 10 | 9 | ------ | |
| 18 | 32.2 | 23.6 | 92 | 62 | 10 | 10 | ------ | Ω a. |
| 19 | 32.6 | 24.2 | 92 | 63 | 10 | 10 | ------ | |
| 20 | 33.2 | 23.1 | 93 | 63 | 7 | 9 | 1 | ●° p. |
| 21 | 33 | 23.5 | 86 | 63 | 8 | 9 | ------ | Ω° a. |
| 22 | 31.3 | 23.8 | 95 | 81 | 10 | 10 | 5.1 | ● a. p. ⊤ ⌒ p. |
| 23 | 29.8 | 24.4 | 90 | 76 | 10 | 10 | 1.1 | d° a. p. |
| 24 | 31.8 | 24.4 | 87 | 68 | 10 | 10 | .1 | d° a. |
| 25 | 32.6 | 24.6 | 79 | 60 | 10 | 8 | ------ | p° a. |
| 26 | 33.4 | 24.6 | 81 | 66 | 10 | 8 | ------ | |
| 27 | 34 | 24.5 | 93 | 70 | 9 | 10 | 1 | ⊤ a. p. p° p. |
| 28 | 34 | 24.5 | 93 | 71 | 10 | 10 | .3 | d a. p. |
| 29 | 28.5 | 24.2 | 89 | 86 | 10 | 10 | 14.4 | p° a. p. ● p. |
| 30 | 29 | 24 | 95 | 82 | 10 | 10 | 1.9 | d° a. p° a. p. ⊤ p. |
| 31 | 29.8 | 24 | 81 | 75 | 10 | 10 | 1.2 | p° a. d° p. |
| Mean | 32.2 | 23.9 | 90.8 | 70.7 | 9.3 | 9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 419.7 | |

### NUEVA CACERES.

[$\phi$=13° 37′ N ; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 25.2 | 21.6 | 97 | 98 | 10 | 10 | 121.7 | ● a. p. |
| 2 | 29.7 | 21.5 | 92 | 84 | 10 | 10 | 27 | ● p. |
| 3 | 33.1 | 22.7 | 96 | 64 | 10 | 8 | ------ | |
| 4 | 32.1 | 22.5 | 97 | 74 | 10 | 8 | .9 | ●° p. |
| 5 | 31.9 | 22.3 | 98 | 84 | 10 | 10 | 2.8 | ●° a. ⊤° a. p. |
| 6 | 32 | 21.6 | 98 | 67 | 7 | 8 | ------ | ≡° a. |
| 7 | 33.3 | 21.5 | 97 | 84 | 8 | 8 | 3.2 | ●° a. |
| 8 | 33.6 | 22.2 | 98 | 78 | 8 | 9 | 27.5 | d ↯ ●² p. |
| 9 | 32.7 | 22.6 | 98 | 66 | 9 | 7 | ------ | |
| 10 | 33.5 | 23 | 96 | 62 | 9 | 9 | ------ | ⊕ ⊖ p. |
| 11 | 33.4 | 23.4 | 97 | 61 | 10 | 8 | 25.3 | ● ⊤° p. |
| 12 | 31.2 | 22.1 | 97 | 76 | 9 | 10 | 26.9 | d ⊤° ● p. |
| 13 | 25.3 | 21.7 | 97 | 97 | 10 | 10 | 85.3 | d a. ●² p. |
| 14 | 27 | 21.2 | 92 | 87 | 10 | 10 | 18 | ●² a. d p. |
| 15 | 28 | 21.8 | 98 | 88 | 10 | 10 | 47.5 | ●² a. d p. |
| 16 | 29.6 | 20.7? | 78 | 71 | 10 | 10 | 6.6 | ● a. |
| 17 | 31.5 | 25.4 | 86 | 67 | 8 | 9 | ------ | |
| 18 | 31.6 | 23.3 | 89 | 68 | 9 | 8 | ------ | |
| 19 | 31.6 | 23 | 95 | 67 | 9 | 9 | 9.6 | ● p. |
| 20 | 31.5 | 22.3 | 94 | 68 | 6 | 8 | ------ | |
| 21 | 31.7 | 22.5 | 93 | 64 | 8 | 9 | ------ | |
| 22 | 31.7 | 23.3 | 92 | 85 | 8 | 8 | 4.1 | d ●° p. |
| 23 | 29 | 23.9 | 89 | 79 | 10 | 10 | .9 | d a. ●° p |
| 24 | 30.5 | 23.2 | 86 | 71 | 10 | 9 | 1.5 | ●° p. |
| 25 | 30.6 | 22.9 | 83 | 72 | 9 | 9 | ------ | d a. |
| 26 | 32.1 | 25 | 89 | 70 | 8 | 8 | 3 | d a. ●° p. |
| 27 | 32.9 | 24 | 95 | 67 | 8 | 8 | 3 | ⌒ a. ●° p. |
| 28 | 32.9 | 23.7 | 98 | 92 | 10 | 10 | 27.1 | d a. ● ⊤° p. |
| 29 | 29 | 21.4 | 98 | 81 | 8 | 9 | 2.5 | ●° a. |
| 30 | 32 | 22.4 | 97 | 75 | 9 | 10 | 10.7 | ⊤° ● p. |
| 31 | 28.7 | 24 | 88 | 77 | 10 | 10 | .8 | ●° p. |
| Mean | 30.9 | 22.7 | 93.5 | 75.6 | 9 | 9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 455.9 | |

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[1] Rainfall from 6 a. m. to 5 p. m. of this day.

[2] Rainfall from 13th, 5 p. m. to 16th, 5 p. m.

## METEOROLOGICAL DATA, ETC.—Continued.

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 27.6 | 23 | 98 | 90 | 10 | 10 | 78.3 | ●$^{2}$ a. p. |
| 2 | 28.2? | 22.6 | 98 | 86 | 10 | 10 | 10.4 | ● a. d a. p. |
| 3 | 31 9 | 23.4 | 97 | 68 | 10 | 6 | .5 | d p. |
| 4 | 32.2 | 22.7 | 97 | 92 | 5 | 7 | ------ | ⊤ p. |
| 5 | 31.3 | 22.2 | 97 | 77 | 5 | 6 | ------ |  |
| 6 | 31.8 | 22.4 | 96 | 65 | 5 | 6 | 1.3 | ⊤ ● p. |
| 7 | 32.6 | 22.5 | 97 | 70 | 5 | 7 | ------ |  |
| 8 | 32.6 | 23.1 | 97 | 68 | 4 | 5 | ------ |  |
| 9 | 33.3 | 23 | 96 | 60 | 4 | 3 | ------ |  |
| 10 | 32.8 | 23.5 | 95 | 65 | .4 | 7 | ------ | ○ a. p. |
| 11 | 33 | 23.3 | 92 | 65 | 6 | 6 | ------ | ○ p. |
| 12 | 32.8 | 24.6 | 90 | 70 | 5 | 7 | ------ | ⊤ p. |
| 13 | 29 | 22.7 | 96 | 78 | 7 | 9 | 56.2 | d a ●$^{2}$ p. |
| 14 | 27.5 | 22.4 | 88 | 92 | 10 | 10 | 128.5 | ●$^{2}$ ↙° a. p. |
| 15 | 28.5 | 20 ? | 87 | 71 | 10 | 10 | 12.5 | ● ↙° a. p. |
| 16 | ------ | 22.4 | 86 | 60 | 10 | 7 | .8 | ● a. p. ○ p. |
| 17 | 30.9 | 23 | 80 | 71 | 6 | 6 | 14.2 | ● ↙° a. ○ p. |
| 18 | 28 | 22.6 | 93 | 80 | 10 | 10 | 5.6 | ● a. p p. |
| 19 | 28.7 | 23.3 | 93 | 73 | 7 | 7 | ------ |  |
| 20 | 30 | 22.4 | 97 | 81 | 7 | 9 | .5 | d p. |
| 21 | 29.7 | 22.5 | 97 | 88 | 7 | 10 | 1.1 | d a. p. |
| 22 | 27 | 23.6 | 93 | 92 | 10 | 10 | 41.1 | d a. ●$^{2}$ p. |
| 23 | 27.3 | 22.8 | 91 | 91 | 10 | 10 | 52 | ●$^{2}$ a. p. |
| 24 | 28.4 | 23.7 | 84 | 79 | 10 | 10 | 44.7 | ●$^{2}$ a. p. |
| 25 | 30.5 | 24.9 | 93 | 74 | 10 | 10 | 1 | ● a. p. |
| 26 | 32.7 | 21.4? | 85 | 68 | 7 | 7 | ------ |  |
| 27 | 30.9 | 23.8 | 95 | 83 | 6 | 10 | .3 | ⌓ a. d p. |
| 28 | 32 | 23.4 | 97 | 69 | 6 | 6 | 9 1 | ● p. |
| 29 | 31.3 | 22.9 | 96 | 75 | 3 | 7 | ------ | ⊤$^{2}$ p. |
| 30 | 31.6 | 23.2 | 97 | 70 | 6 | 7 | ------ |  |
| 31 | 30 | 24.2 | 88 | 70 | 7 | 7 | 14.5 | ● p. |
| Mean | 30.5? | 23 | 93.1 | 75.5 | 7.2 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 472.6 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30 | 20 | 97 | 75 | 10 | 10 | 15.2 | d a. p. ●° p. |
| 2 | 27.4 | 19.4 | 97 | 78 | 10 | 9 | 13.7 | ●° a. ● a. p. |
| 3 | 27.8 | 21 | 98 | 70 | 9 | 5 | ------ | ⌓ ≡ a. |
| 4 | 30.3 | 21.3 | 98 | 77 | 7 | 9 | 43.7 | ● ⊤ p. |
| 5 | 27.9 | 20 | 98 | 74 | 5 | 8 | ------ | ⌓ a. |
| 6 | 30.5 | 20.7 | 98 | 68 | 7 | 2 | ------ |  |
| 7 | 31.2 | 21.2 | 97 | 64 | 7 | 8 | ------ | d a. |
| 8 | 31.8 | 21.6 | 98 | 62 | 2 | 8 | 4.3 | d ●° p. |
| 9 | 30.3 | 20 | 98 | 65 | 4 | 8 | ------ | ⌓ ≡ a. |
| 10 | 31 | 20.5 | 97 | 68 | 9 | 7 | ------ | d a. |
| 11 | 30.8 | 20.1 | 98 | 63 | 2 | 8 | ------ | d a. |
| 12 | 30.1 | 20 | 98 | 64 | 5 | 6 | 7.6 | ⌓ ≡ a. ● p. |
| 13 | 31 | 20.9 | 98 | 68 | 10 | 7 | 23.4 | d a. ● p. |
| 14 | 28.9 | 19.2 | 98 | 82 | 10 | 10 | 108.7 | ○ a. ●$^{2}$ a. p. |
| 15 | 25.5 | 15.7? | 98 | 88 | 10 | 10 | 87.4 | ↙ ● a. p. |
| 16 | 25.2 | 16.8? | 97 | 83 | 10 | 7 | 8.4 | ● p. |
| 17 | 26.6 | 19 | 97 | 73 | 10 | 8 | ------ |  |
| 18 | 30 | 20.4 | 97 | 69 | 4 | 7 | 2.5 | ⌓ d a. ●° p. |
| 19 | 29.3 | 20 | 98 | 70 | 2 | 8 | ------ | ⊤ p. |
| 20 | 29.9 | 19.2 | 98 | 72 | 7 | 10 | 12.7 | ●° a. |
| 21 | 28.4 | 19.4 | 97 | 70 | 2 | 8 | 3.8 | ⌓ ≡ a. ●° p. |
| 22 | 27.8 | 19 | 98 | 76 | 10 | 10 | 60.7 | ●° a. p. ●$^{2}$ p. |
| 23 | 27.2 | 18.4 | 97 | 75 | 10 | 8 | 40.7 | ● a. ●$^{2}$ p. |
| 24 | 27.5 | 19 | 97 | 70 | 10 | 8 | ------ | ⌓ a. |
| 25 | 28.1 | 20 | 98 | 71 | 5 | 10 | 3.6 | ⌓ ≡ ●° a. |
| 26 | 28.9 | 20.4 | 97 | 68 | 7 | 8 | ------ | ⊤ p. |
| 27 | 29.4 | 20 | 98 | 69 | 10 | 10 | 18.5 | ● a. |
| 28 | 29 | 20.1 | 98 | 69 | 3 | 7 | ------ |  |
| 29 | 30.1 | 20.6 | 97 | 69 | 7 | 8 | ------ | d p. |
| 30 | 30.5 | 20.8 | 98 | 66 | 5 | 7 | ------ | ⌓ ≡ a. |
| 31 | 30.5 | 20.5 | 98 | 71 | 10 | 10 | ------ | d p. |
| Mean | 29.1 | 19.8? | 97.6 | 71.2 | 7.1 | 8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 454.9 |  |

### SANTA CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.8 | 23.9 | 96 | 97 | 10 | 10 | 126.5 | ☈ ● a. ↙° ●$^{2}$ p. |
| 2 | 27.6 | 22.9 | 97 | 75 | 10 | 10 | .3 | ●$^{2}$ p a. ○ ●° p. |
| 3 | ------ | 23.7 | 97 | 61 | 10 | 8 | ------ | ○ a. d$^{2}$ ☇ ◒ p. |
| 4 | 33.8 | 22.6 | 96 | 77 | 9 | 9 | .5 | ○ a. ☈ ●° ⍦ p. |
| 5 | 34.1 | 21.7 | 98 | 82 | 8 | 9 | ------ | ⌓$^{2}$ a. d ⊕ ☇ ⍦ p. |
| 6 | ------ | 21.3 | 97 | 66 | 4 | 6 | ------ | ⌓$^{2}$ a. p ☇ ◒ p. |
| 7 | 33.4 | 22.9 | 95 | 63 | 9 | 7 | 2 | ⌓ ● a. ☇ p. |
| 8 | 35.7 | 22.3 | 97 | 67 | 6 | 8 | 22.9 | ⌓ a. ☈ ●$^{2}$ p. |
| 9 | 34.3 | 22.2 | 97 | 69 | 2 | 5 | ------ | ⊤ d ☇ p. |
| 10 | 34 | 23.2 | 88 | 61 | 9 | 9 | ------ | ⌓ a. ○ ☇ ↙° p. |
| 11 | 33 | 23.3 | 94 | 64 | 9 | 9 | 4.6 | d ○ a. ⊤ ● ☇ p. |
| 12 | 32.2 | 22.3 | 98 | 66 | 9 | 7 | 50.4 | ●° ○a. ☈ ●$^{2}$ ↙° |
| 13 | 32.2 | 21.6 | 98 | 77 | 9 | 10 | 36.1 | p a. ☈ ●$^{2}$ p. |
| 14 | 30.1 | 22 6 | 97 | 88 | 10 | 10 | 43.7 | ↙° ●$^{2}$ a. ↙ ● p. |
| 15 | 27 | 22.2 | 99 | 91 | 10 | 10 | 57.4 | ↙ ●$^{2}$ a. ↙° ● p. |
| 16 | ------ | 22.6 | 91 | 62 | 9 | 10 | 3.6 | ●° a. ↙ a. p. d p. |
| 17 | 31.1 | 23.8 | 84 | 69 | 10 | 9 | 9.4 | ↙° ○ p a. d ☇ p. |
| 18 | 32 | 23.1 | 91 | 79 | 10 | 9 | 3.7 | ● d a. ●° p. |
| 19 | 28.9 | 23.3 | 96 | 89 | 9 | 9 | .7 | d p p. |
| 20 | 31 | 22.4 | 94 | 68 | 8 | 9 | .3 | d a. p. ↙° p. |
| 21 | 32.3 | 22.2 | 96 | 73 | 9 | 9 | .8 | d a. p. p p. |
| 22 | 31.2 | 23.3 | 97 | 87 | 9 | 9 | 29.5 | ↙° ● a. p. |
| 23 | 31.6 | 22.7 | 97 | 86 | 10 | 9 | 74.4 | ●$^{2}$ a. p. |
| 24 | 27.8 | 23.8 | 91 | 81 | 10 | 10 | 6.3 | ●$^{2}$a. ↙°a. p. ●°p. |
| 25 | 29.3 | 24.5 | 81 | 70 | 9 | 9 | 6.1 | ↙° a. d ● p. |
| 26 | 32.4 | 24.9 | 88 | 74 | 8 | 9 | .8 | ↙° a. p d ☇ p. |
| 27 | 33 | 24.1 | 97 | 68 | 9 | 9 | 1.3 | ●° a. ⊤ d ☇ p. |
| 28 | 32.1 | 23.6 | 97 | 63 | 9 | 9 | .8 | ⌓ a. ○ ⊤ ●° ☇ p. |
| 29 | 32.7 | 22.7 | 96 | 69 | 9 | 9 | .5 | d ○ a. ⊤ ●° ☇ p. |
| 30 | 32.1 | 23.1 | 97 | 73 | 9 | 9 | 1.3 | ≡ d ○ a. ⊤ ●° p. |
| 31 | 31.2 | 23.5 | 97 | 83 | 10 | 10 | .8 | d ●° a. |
| Mean | 31.7 | 23 | 94.6 | 74.1 | 8.7 | 8.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 484.7 |  |

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 27.5 | 22.5 | 99 | 96 | 10 | 10 | 118.6 | ●° a. ●$^{2}$ p. |
| 2 | 26.7 | 22 | 97 | 88 | 10 | 8 | 45.7? | ●$^{2}$ a. p. |
| 3 | 31.7 | 23 | 96 | 66 | 8 | 7 | ------ |  |
| 4 | 30.2 | 23 | 94 | 66 | 8 | 9 | 1.3 | ☈ ● ⍦ p. |
| 5 | 30.5 | 21.3 | 97 | 79 | 6 | 8 | ------ | ⌓$^{2}$ a. |
| 6 | 31.1 | 21.3 | 89 | 71 | 6 | 7 | 1.8 | ●° a. p. |
| 7 | 31.1 | 22.1 | 98 | 80 | 6 | 9 | .5 | ⌓$^{2}$ a. d p. |
| 8 | 31.4 | 21.7 | 96 | 65 | 4 | 5 | ------ | ☈ ●° p. |
| 9 | 29.8 | 22.5 | 97 | 66 | 6 | 4 | ------ |  |
| 10 | 29.9 | 22.1 | 98 | 69 | 5 | 6 | 1 | ◒ ●° p. |
| 11 | 31.2 | 22.6 | 87 | 69 | 4 | 8 | ------ |  |
| 12 | 31.7 | 20.5 | 98 | 70 | 8 | 5 | 48.8 | ●$^{2}$ ☈$^{2}$ p. |
| 13 | 30.2 | 20.9 | 97 | 88 | 8 | 9 | 74.7 | ●° a. ●$^{2}$ p. |
| 14 | 25.8 | 21.7 | 100 | 89 | 10 | 10 | 55.4 | ● a. ●$^{2}$ p. |
| 15 | 26.8 | 21.4 | 100 | 99 | 10 | 10 | 166.9 | ●$^{2}$ a. p. |
| 16 | 29.8 | 21.2 | 99 | 75 | 10 | 10 | 35.8 | ●$^{2}$ ↙° a. p. |
| 17 | 28 | 21.9 | 82 | 93 | 9 | 10 | 78.4 | ● ↙° a. p. |
| 18 | 28.3 | 22 | 100 | 89 | 10 | 10 | 86 3 | ≡$^{2}$ a. ●$^{2}$ a. p. |
| 19 | 28.1 | 22.3 | 99 | 84 | 9 | 9 | 38.9 | ●$^{2}$ a. p. |
| 20 | 28.8 | 21.7 | 98 | 88 | 7 | 10 | 27.4 | ● a. p. |
| 21 | 29 | 21.5 | 97 | 100 | 8 | 10 | 34 | ● a. p. |
| 22 | 27.8 | 22 | 99 | 95 | 10 | 10 | 55.2 | ●$^{2}$ a. p. |
| 23 | 25.8 | 22 | 98 | 99 | 10 | 10 | 63.5 | ●$^{2}$ a. p. |
| 24 | 27.1 | 22.5 | 95 | 93 | 10 | 10 | 2 3 | ●° p. |
| 25 | 29.8 | 24 | 90 | 83 | 9 | 10 | .5 | d a. |
| 26 | 30.2 | 23.4 | 94 | 82 | 9 | 9 | .3 | ●° p. |
| 27 | 30.3 | 22.9 | 97 | 85 | 10 | 9 | 19.8 | ● p. |
| 28 | 31.5 | 22.8 | 98 | 75 | 8 | 7 | 20.8 | ● ☈ p. |
| 29 | 30.8 | 21.8 | ------ | 93 | 5 | 10 | .3 | d a. |
| 30 | 29.9 | 22.6 | 98 | 76 | 5 | 8 | 43.1 | ●° a. ●$^{2}$ p. |
| 31 | 27.8 | 22.5 | 97 | 97 | 10 | 10 | 43.2 | ●$^{2}$ a. p. |
| Mean | 29.3 | 22.1 | 96.1 | 82.8 | 8 | 8.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1064.5? |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### IBA.

[φ=15° 20′ N; λ=119° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28.8 | 23.6 | 95 | 83 | 10 | 10 | 242.3 | ● d a. ↙° ●$^2$ ☈ |
| 2 | 26.8 | 24 | 99 | 93 | 10 | 10 | 103.4 | ↙$^2$ ●$^2$ a. p. |
| 3 | 30.4 | 23 | 90 | 73 | 10 | 10 | 24.6 | ● a p. |
| 4 | 31.4 | 23.3 | 90 | 65 | 10 | 10 | ------ | ◯ a p. d p. |
| 5 | 31.2 | 23 | 93 | 80 | 10 | 10 | 1.5 | ☈° ●° p. |
| 6 | 32.5 | 21.5 | 96 | 65 | 4 | 6 | ------ | d p. |
| 7 | 32 | 23.6 | 94 | 81 | 6 | 10 | ------ | ◯ a. ☈ ⌒ d p. |
| 8 | 31.5 | 23 | 97 | 74 | 7 | 8 | 13.5 | T ● < ⌣° p. |
| 9 | 31.5 | 23.3 | 97 | 73 | 10 | 8 | 1.3 | T ●° p |
| 10 | 30.9 | 24 | 94 | 72 | 10 | 10 | 5.6 | ⌒ ◯ a. ☈° ● p. |
| 11 | 31.6 | 23.2 | 96 | 71 | 10 | 10 | 1 | ◯ T° ●° p. |
| 12 | 32 | 23 | 94 | 73 | 8 | 10 | ------ | d a. ◯ a. p < p. |
| 13 | 30.9 | 23.1 | 91 | 81 | 10 | 10 | 70.9 | d a ●$^2$ ☈ p. |
| 14 | 26.5 | 22 | 97 | 89 | 10 | 10 | 187.2 | ● a. ↙° ●$^2$ p |
| 15 | 27.3 | 23 | 93 | 91 | 10 | 10 | 172.5 | ↙° a. ●$^2$ a. p. |
| 16 | 28 | 22.7 | 88 | 84 | 10 | 10 | 118.1 | ●$^2$ a. p. |
| 17 | 27.8 | 22.5 | 90 | 88 | 10 | 10 | 167.7 | T° ● a. ☈$^2$ ●$^2$ p. |
| 18 | 24.8 | 22.1 | 98 | 98 | 10 | 10 | 135.3 | T a. ●$^2$ a. p. |
| 19 | 27.1 | 22.1 | 98 | 88 | 10 | 10 | 15.5 | ● a p. d p. |
| 20 | 26.4 | 22 | 96 | 96 | 10 | 10 | 131.8 | ⌒$^2$ ● a ●$^2$ p. |
| 21 | 25.5 | 21.5 | 97 | 94 | 10 | 10 | 25.3 | ●° a. ● p. |
| 22 | 26.4 | 23.3 | 97 | 96 | 10 | 10 | 135.5 | ●$^2$ a p. |
| 23 | 27.3 | 22.5 | 96 | 92 | 10 | 10 | 103.3 | ●$^2$ a. p. |
| 24 | 28.4 | 23.5 | 92 | 85 | 10 | 10 | 36.6 | T a. ● a. p. |
| 25 | 29.7 | 24.5 | 94 | 84 | 10 | 10 | 72.3 | T ● a. ☈ ●$^2$ p. |
| 26 | 30.4 | 23.2 | 90 | 82 | 10 | 10 | 25.2 | ● a. p. |
| 27 | 30 | 23.5 | 96 | 85 | 10 | 10 | 17.8 | ● a. p < p. |
| 28 | 30.5 | 23.1 | 96 | 81 | 10 | 10 | 3.6 | d a. ◯ ☈ ● p. |
| 29 | 30.5 | 23 | 98 | 74 | 10 | 8 | 7.6 | ⌒ ● ☈ p |
| 30 | 30.5 | 22.4 | 97 | 74 | 7 | 10 | 1 | ◯ a. p ●° < p. |
| 31 | 27.3 | 23.1 | 97 | 88 | 10 | 10 | 11.8 | d ● a. p. ⌒ p. |
| Mean | 29.2 | 23 | 94.7 | 82.4 | 9.4 | 9.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1832.2 | |

### TARLAC.

[φ=15° 30′ N; λ=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 23.8 | 95 | 68 | 10 | 10 | 19 | Ω ≡° a. ● p. |
| 2 | 25.5 | 23.5 | 97 | 95 | 10 | 10 | 50 | ●$^2$ a. ● p. |
| 3 | 31 | 23.4 | 97 | 65 | 10 | 8 | .8 | Ω ≡ ● a. |
| 4 | 32.2 | 22.8 | 95 | 60 | 9 | 10 | 48 | Ω ≡° a. ●$^2$ p. |
| 5 | 33.3 | 22.5 | 96 | 60 | 7 | 9 | 2.5 | Ω ≡° a. ● ⌣ p. |
| 6 | 34.6 | 21.8 | 96 | 54 | 10 | 3 | ------ | Ω ≡° a ⌣ p. |
| 7 | 35.5 | 23.2 | 95 | 47 | 3 | 3 | ------ | Ω ≡° a. |
| 8 | 34.7 | 21.8 | 97 | 52 | 2 | 2 | ------ | Ω ≡ a. ● ☈ p. |
| 9 | 35 | 24.2 | 96 | 47 | 7 | 10 | 21.6 | Ω ≡° a ● p. |
| 10 | 34.6 | 23.4 | 97 | 48 | 10 | 10 | 4.3 | Ω ≡ a. T ● p. |
| 11 | 33.6 | 22.6 | 97 | 72 | 7 | 10 | ------ | Ω ≡ a. T p. |
| 12 | 35.6 | 22.8 | 96 | 65 | 9 | 8 | ------ | Ω ≡° a. |
| 13 | 34 | 23.6 | 97 | 59 | 7 | 9 | 4.1 | Ω ≡ a. ● p. |
| 14 | 26 | 23.1 | 97 | 91 | 10 | 10 | 69.1 | ● a. ●$^2$ p. |
| 15 | 25.9 | 21.6 | 97 | 91 | 10 | 10 | 57.9 | ● a. ●$^2$ p. |
| 16 | 25 | 22.6 | 97 | 85 | 10 | 10 | 78.7 | ● a. ●$^2$ p. |
| 17 | 26 | 22 | 96 | 85 | 10 | 10 | 111 | ●$^2$ a. p. |
| 18 | 25 | 23 | 96 | 95 | 10 | 10 | 25.6 | ● a. p. |
| 19 | 28 | 22.4 | 97 | 79 | 10 | 10 | 2 | Ω ≡ a. d p. |
| 20 | 30.2 | 23.8 | 96 | 68 | 10 | 10 | 3.8 | Ω a. ● p. |
| 21 | 26 | 22.2 | 97 | 88 | 10 | 10 | 61.5 | ● a. ●$^2$ p. |
| 22 | 28 | 21.6 | 97 | 91 | 10 | 10 | 67.8 | ● a. ●$^2$ p. |
| 23 | 25 | 22.4 | 93 | 97 | 10 | 10 | 118.9 | ●$^2$ a. p. |
| 24 | 27 | 23 | 95 | 94 | 10 | 10 | 34.8 | ● a. p. |
| 25 | 29 | 23.8 | 96 | 90 | 10 | 9 | 7.1 | ● a. p |
| 26 | 31.6 | 23.6 | 96 | 73 | 9 | 9 | 5.6 | Ω ∩ a. ● p. |
| 27 | 31.6 | 24.2 | 97 | 87 | 10 | 10 | 4.3 | d a. p. T p. |
| 28 | 31.8 | 23.1 | 97 | 67 | 8 | 9 | ------ | Ω a. |
| 29 | 34.7 | 22.8 | 95 | 63 | 8 | 7 | 57.7 | Ω a. ● ☈ p. |
| 30 | 34.5 | 2[illegible].5 | 97 | 44 | 3 | 9 | 59.7 | Ω a. ● p. |
| 31 | 28.8 | 22.5 | 97 | 92 | 10 | 10 | 9.1 | ● a. p. |
| Mean | 30.5 | 22.9 | 96.3 | 73.3 | 8.7 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 924.9 | |

### BALER.

[φ=15° 40′ N; λ=121° 34′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.2 | 24.6 | 90 | 94 | 10 | 10 | 62.7 | d a p. ●$^2$ p. |
| 2 | 29.2 | 23.9 | 97 | 77 | 10 | 10 | 3.5 | ● a d° p. |
| 3 | 32.7 | 23.5 | 95 | 66 | 10 | 10 | 52.1 | Ω a. d ●$^2$ T < p. |
| 4 | 31.1 | 22.6 | 97 | 78 | 10 | 10 | .1 | Ω° ≡ a d p. |
| 5 | 32.7 | 23.2 | 95 | 89 | 10 | 10 | .8 | Ω a. ● T < p. |
| 6 | 32.9 | 22.3 | 95 | 67 | 10 | 4 | 23.1 | Ω a ● p. |
| 7 | 31.8 | 23.7 | 94 | 72 | 7 | 3 | ------ | Ω a |
| 8 | 32.4 | 22.4 | 94 | 67 | 9 | 1 | ------ | Ω a. < p. |
| 9 | 34.6 | 23 | 93 | 62 | 9 | 1 | ------ | Ω a ⌒ ☈ p. |
| 10 | 35.4 | 25.7 | 83 | 57 | 10 | 3 | ------ | ⌣ p. |
| 11 | 34.1 | 25 | 85 | 63 | 10 | 5 | 37.3 | ● ☈ p. |
| 12 | 33.3 | 23.7 | 93 | 71 | 10 | 3 | 15.7 | Ω a ● < T p. |
| 13 | 32.3 | 23.1 | 91 | 71 | 10 | 10 | 38.1 | Ω a ● p |
| 14 | 27.3 | 22.4 | 84 | 76 | 10 | 10 | 42.4 | ● d ↙° a. p. |
| 15 | 26.2 | 21.6 | 91 | 89 | 10 | 10 | 7.9 | ● a. d a p. |
| 16 | 27.1 | 23 | 92 | 86 | 10 | 10 | 3.1 | d$^2$ a. d p. |
| 17 | 29.1 | 23.9 | 91 | 77 | 10 | 10 | 2.3 | d a p. ● p. |
| 18 | 31.1 | 24.2 | 89 | 73 | 10 | 10 | ------ | Ω a. |
| 19 | 32.1 | 23 | 90 | 69 | 10 | 10 | ------ | |
| 20 | 32.4 | 23.8 | 86 | 86 | 10 | 10 | 3 | ● d p. |
| 21 | 30.1 | 22.7 | 96 | 82 | 10 | 10 | ------ | Ω ≡° a d p. |
| 22 | 29.9 | 23.4 | 92 | 82 | 10 | 10 | 30.7 | Ω ⌒ d a. ● p. |
| 23 | 29.9 | 23.2 | 93 | 79 | 10 | 10 | 12.5 | d ● a. p. |
| 24 | 30.8 | 23.1 | 86 | 83 | 10 | 10 | 7.4 | d a ● a p. |
| 25 | 31.4 | 23.5 | 97 | 93 | 10 | 10 | 21.8 | ● a. p. |
| 26 | 32.3 | 24 | 87 | 72 | 10 | 4 | ------ | d < p. |
| 27 | 34.7 | 24.4 | 93 | 64 | 9 | 8 | ------ | Ω a ⌒ p |
| 28 | 32.9 | 23.9 | 93 | 72 | 10 | 8 | 3.3 | Ω d a. T ● < p. |
| 29 | 32.3 | 23.2 | 96 | 68 | 10 | 4 | ------ | Ω ≡° a. |
| 30 | 33 | 23.3 | 94 | 63 | 5 | 10 | ------ | Ω a. |
| 31 | 27.9 | 25.1 | 85 | 84 | 10 | 10 | 7.4 | d a. p. ● p. |
| Mean | 31.4 | 23.5 | 91.5 | 75.2 | 9.6 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 375.2 | |

### SAN FERNANDO, UNION.

[φ=16° 37′ N; λ=120° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | 23.3 | 97 | 81 | 10 | 10 | 32.3 | d$^2$ a d ● p. |
| 2 | ------ | 22.7 | 97 | 81 | 10 | 9 | 21.3 | ↙ ● a. d p. |
| 3 | ------ | 24.1 | 81 | 75 | 10 | 7 | ------ | |
| 4 | ------ | 24.6 | 84 | 68 | 10 | 8 | 4.1 | ☈ a. ● p. |
| 5 | ------ | 22.4 | 97 | 72 | 3 | 3 | ------ | |
| 6 | ------ | 21.9 | 96 | 71 | 2 | 3 | ------ | |
| 7 | ------ | 24.3 | 97 | 70 | 4 | 4 | ------ | |
| 8 | ------ | 23.9 | 96 | 66 | 2 | 2 | ------ | p a. T p. |
| 9 | ------ | 24.5 | 88 | 71 | 4 | 6 | 32.8 | ●$^2$ ☈$^2$ p. |
| 10 | ------ | 22.3 | 98 | 69 | 5 | 3 | ------ | ☈ a. |
| 11 | ------ | 24.6 | 87 | 72 | 8 | 5 | ------ | |
| 12 | ------ | 23.7 | 97 | 67 | 2 | 6 | ------ | Ω a. ⌒$^2$ p. |
| 13 | ------ | 24.1 | 96 | 72 | 9 | 7 | 34 | ●° d$^2$ T p |
| 14 | ------ | 21.7 | 93 | 98 | 10 | 10 | 154.5 | ●$^2$ a. ● ↙ ☈$^2$p. |
| 15 | ------ | 20.8 | 98 | 98 | 10 | 10 | 101.9 | d ●$^2$ ↙$^2$ a p |
| 16 | ------ | 22.2 | 95 | 94 | 10 | 10 | 84.1 | ●$^2$ a. p. |
| 17 | ------ | 22 | 99 | 95 | 10 | 10 | 73.7 | d° ●$^2$ a d ● p. |
| 18 | ------ | 22.7 | 98 | 93 | 10 | 10 | 9.4 | ● a d p. |
| 19 | ------ | 22.7 | 96 | 89 | 7 | 9 | ------ | |
| 20 | ------ | 23.2 | 93 | 96 | 7 | 10 | 24.9 | ● a d$^2$ p. |
| 21 | ------ | 23.1 | 92 | 94 | 7 | 10 | .8 | ∩° T p. |
| 22 | ------ | 23.2 | 87 | 71 | 7 | 7 | 17.3 | ◯ ●° p |
| 23 | ------ | 23 | 92 | 97 | 10 | 10 | 107.8 | ● a p. d p. |
| 24 | ------ | 22.2 | 96 | 96 | 10 | 10 | 158.6 | ● a. p d$^2$ p. |
| 25 | ------ | 23.5 | 98 | 93 | 10 | 10 | 112.8 | d a. ●$^2$ a. p. |
| 26 | ------ | 23.5 | 92 | 98 | 10 | 10 | 37.4 | d a ● a. p. |
| 27 | ------ | 23.7 | 93 | 78 | 2 | 8 | 1.3 | ☈° p |
| 28 | ------ | 23.8 | 97 | 74 | 10 | 7 | 9.7 | d a. T° d$^2$ p. |
| 29 | ------ | 22.7 | 97 | 71 | 4 | 5 | 4.3 | ● p. |
| 30 | ------ | 23.6 | 97 | 75 | 5 | 7 | 3.6 | d p |
| 31 | ------ | 24.2 | 98 | 85 | 9 | 10 | 52.1 | d° ● p. |
| Mean | ------ | 23.2 | 94.3 | 81.6 | 7.3 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1078.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ECHAGUE.
[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 28.3 | 23.9 | 97 | 91 | 10 | 10 | 79 | d²a p ●↙°ϟ°p. |
| 2 | 28.6 | 22.8 | 98 | 81 | 10 | 10 | 12.2 | ↙ ●² d a. ●° p. |
| 3 | 32.4 | 22.6 | 97 | 65 | 10 | 9 | 5.3 | ◯² a. ◯° d² p. |
| 4 | 33.5 | 22 | 98 | 63 | 10 | 10 | ------ | d²a.◯°a. p. ⛈° |
| 5 | 29.8 | 22.8 | 98 | 76 | 10 | 10 | ------ | ⊤°a p. d° ϟ°p. |
| 6 | 35 | 21.7 | 97 | 58 | 2 | 4 | ------ | Ω² a. ⊤° d° p. |
| 7 | 33.9 | 22.5 | 97 | 53 | 2 | 2 | ------ | Ω² a. |
| 8 | 35.5 | 22.8 | 96 | 54 | 1 | 2 | ------ | Ω²a ⊤°⌒°ϟ°∪°p |
| 9 | 35.2 | 23 6 | 96 | 54 | 3 | 3 | .3 | Ω² a. ⛈° d² p. |
| 10 | 34.7 | 22.1 | 97 | 57 | 6 | 3 | ------ | ⊤°a ⛈°⊤²∪ p. |
| 11 | 35 | 22.1 | 97 | 56 | 8 | 7 | 7.1 | ◯°a p ⛈°●° p. |
| 12 | 32.6 | 22 | 98 | 68 | 6 | 7 | 4.6 | ◯²a. p. ⊤ ϟ d² p. |
| 13 | 31.1 | 23.2 | 97 | 68 | 10 | 10 | 21.1 | ● d p |
| 14 | 28.9 | 22.8 | 99 | 96 | 10 | 10 | 62.1 | d² a. ↙ ●² d p. |
| 15 | 27.2 | 22 | 96 | 82 | 10 | 10 | 11 | ↙ d a. d° p. |
| 16 | 29 | 24.5 | 75 | 63 | 10 | 10 | ------ | d° a. |
| 17 | 32.3 | 22.2 | 96 | 71 | 10 | 10 | .3 | ◯² a. d² p. |
| 18 | 33.5 | 22.6 | 97 | 64 | 10 | 8 | .3 | ⊤°⊕²a. ⊤°d²∪p. |
| 19 | 32.5 | 22.7 | 97 | 66 | 10 | 10 | ------ | ◯²a.p. ⊤°⌒ϟ° p. |
| 20 | 33 | 23.3 | 97 | 61 | 10 | 10 | 4.6 | ⊕°a. ⊤°a p. d²p. |
| 21 | 32.9 | 21.4 | 96 | 63 | 7 | 9 | 1.1 | Ω²◯°a. ⊕ϟ°●°p. |
| 22 | 33.9 | 21.7 | 96 | 65 | 6 | 10 | 3.8 | Ωa. ⊤°d²⌒ϟ°p. |
| 23 | 33.1 | 22.5 | 97 | 59 | 9 | 10 | 4.8 | Ω² ⌒°⊕°a. d² p. |
| 24 | 29.4 | 23.3 | 97 | 84 | 10 | 10 | .3 | d² a. d° a. p |
| 25 | 32.5 | 24.2 | 95 | 65 | 8 | 9 | ------ | ⊕° a. d° a. p. |
| 26 | 36 | 22.8 | 97 | 54 | 7 | 8 | ------ | ◯° a. ⊤° ϟ° p. |
| 27 | 34.6 | 23.9 | 96 | 64 | 3 | 8 | 23.9 | Ω²⊤°a ⛈°●²p. |
| 28 | 32.9 | 22.5 | 97 | 68 | 10 | 10 | ------ | ≡ a. ⛈° d° p. |
| 29 | 33.7 | 23.6 | 98 | 59 | 10 | 4 | ------ | d° a p. ⛈° p. |
| 30 | 33.6 | 23.9 | 97 | 59 | 10 | 9 | 4.3 | ◯°a.p. ⛈ d² p. |
| 31 | 27.1 | 23.3 | 97 | 95 | 10 | 10 | 31.1 | d a. p. ●² p. |
| Mean | 32.3 | 22.8 | 96.2 | 67.2 | 8 | 8.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 277.2 | |

### CANDON.
[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.5 | 24.5 | 93 | 86 | 10 | 10 | 9.9 | ● a. p. ⌒° ϟ p. |
| 2 | 27.2 | 24.9 | 94 | 88 | 10 | 10 | 47.8 | ●² a. d° a. p. |
| 3 | 31.7 | 24.5 | 93 | 70 | 10 | 10 | -------- | ∪ p. |
| 4 | 31.7 | 25.5 | 90 | 72 | 10 | 10 | 27.9 | Ω° a. ⊤° ● p. |
| 5 | 30.6 | 23.5 | 91 | 74 | 4 | 3 | 5.1 | ⊤°⌒°●⛈°p. |
| 6 | 30.7 | 23.5 | 88 | 75 | 2 | 1 | -------- | ⊤° p. |
| 7 | 31.2 | 25.5 | 92 | 76 | 0 | 3 | .5 | Ω a |
| 8 | 31.8 | 26.5 | 94 | 75 | 4 | 0 | -------- | p a. ⊤° ϟ p. |
| 9 | 31.4 | 25.6 | 90 | 79 | 5 | 7 | 34.5 | Ωa. ⊤°⌒°●p. |
| 10 | 30.6 | 25 | 92 | 81 | 6 | 4 | 3 | |
| 11 | 31.1 | 25.9 | 92 | 71 | 9 | 7 | -------- | p a. ϟ p. |
| 12 | 31 2 | 25.1 | 88 | 67 | 4 | 9 | -------- | Ω² a. ⌒² d p. |
| 13 | 31.3 | 24.5 | 84 | 71 | 9 | 9 | 24.1 | Ω a. ⊤° ● p. |
| 14 | 27.5 | 24 | 85 | 88 | 10 | 10 | 71.1 | ●² a. p. |
| 15 | 25.7 | 24 | 91 | 96 | 10 | 10 | 201.9 | ɑ a. ●² ↙ a. p. |
| 16 | 25 8 | 23.9 | 95 | 92 | 10 | 10 | 101.6 | ●² a. p. |
| 17 | 26.2 | 23.6 | 95 | 92 | 10 | 10 | 110.5 | ●² a. p. |
| 18 | 26.9 | 23.9 | 96 | 88 | 10 | 10 | 4.6 | ● a. |
| 19 | 28.9 | 23.8 | 92 | 85 | 10 | 10 | 24.6 | ● ⊤° p. |
| 20 | 28.6 | 24 | 87 | 77 | 9 | 10 | 1.5 | ● ⊤° p. |
| 21 | 30.1 | 23.7 | 91 | 84 | 8 | 10 | 2.5 | ● p. |
| 22 | 30.2 | 24.6 | 83 | 77 | 8 | 9 | 6.1 | ɑ p. |
| 23 | 28.2 | 25 | 88 | 86 | 10 | 10 | 41.7 | ● a. p. |
| 24 | 25.7 | 24.2 | 92 | 94 | 10 | 10 | 122.9 | ●° a. ↙° ● p. |
| 25 | 28.4 | 24.1 | 92 | 85 | 10 | 10 | 47.2 | ↙° a. ●² a. p. |
| 26 | 28.2 | 24.1 | 92 | 90 | 10 | 10 | 42.6 | ●² a p. |
| 27 | 29.7 | 24 8 | 92 | 79 | 4 | 8 | 4.1 | ɑ a. ⊤° ● p. |
| 28 | 29.7 | 24.8 | 92 | 79 | 10 | 9 | 34.5 | ⛈° ● p. |
| 29 | 29.7 | 23.9 | 91 | 78 | 7 | 4 | -------- | ⌒° ϟ p. |
| 30 | 29.8 | 25.5 | 88 | 79 | 8 | 9 | 34.5 | Ω a. ●² p. |
| 31 | 28.7 | 25 | 91 | 78 | 10 | 10 | 106.9 | ● a. ●² p. |
| Mean | 29.3 | 24.6 | 90.8 | 81 | 8 | 8.1 | -------- | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1,171.6 | |

### LAOAG.
[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 35 | 24 5 | 95 | 59 | 10 | 10 | 1 | d a. |
| 2 | 33 4 | 28 | 55 | 67 | 10 | 10 | -------- | ↙° d° a. ∪² p. |
| 3 | 34.9 | 24.4 | 92 | 50 | 10 | 7 | -------- | ∪ p. |
| 4 | 35.3 | 25.1 | 91 | 51 | 10 | 10 | 1 | ●° p. |
| 5 | 33.9 | 23.2 | 91 | 55 | 3 | 4 | -------- | d° p. |
| 6 | 32.8 | 23.1 | 91 | 67 | 0 | 2 | -------- | |
| 7 | 33.4 | 24.4 | 91 | 63 | 0 | 4 | -------- | |
| 8 | 34.3 | 24.5 | 89 | 57 | 0 | 2 | -------- | |
| 9 | 33.2 | 24.6 | 90 | 63 | 0 | 3 | 2.3 | ●° a. |
| 10 | 34.7 | 23 6 | 87 | 56 | 3 | 3 | -------- | |
| 11 | 35.2 | 24.5 | 84 | 54 | 2 | 7 | -------- | |
| 12 | 34.3 | 24.6 | 84 | 58 | 7 | 7 | -------- | ∪ p |
| 13 | 33.7 | 24 | 91 | 66 | 3 | 7 | 25.9 | ↙° d° ● p. |
| 14 | 29 | 22.1 | 98 | 78 | 10 | 10 | 138.5 | ●² a.p d° ↙ p |
| 15 | 28.4 | 23.1 | 86 | 86 | 10 | 10 | 169.7 | ↙ ●°a d° ●² ↙²p |
| 16 | 26 | 23 | 98 | 97 | 10 | 10 | 181.9 | ●² ↙² a. ● ↙ p. |
| 17 | 25.5 | 23.3 | 97 | 97 | 10 | 10 | 140 | ●² a. p. ⊤² p. |
| 18 | 29.2 | 23.4 | 93 | 83 | 10 | 10 | 2.8 | d² a |
| 19 | 30.9 | 23.3 | 96 | 75 | 9 | 10 | 46.2 | ●² p. |
| 20 | 30 | 23 | 97 | 72 | 10 | 10 | 1.3 | ●° p. |
| 21 | 31 | 23.4 | 96 | 78 | 4 | 10 | 23 | d° ● p. |
| 22 | 31.5 | 23.4 | 95 | 67 | 1 | 4 | 22.4 | ● p |
| 23 | 30.8 | 23.3 | 96 | 66 | 3 | 10 | 5.8 | d° a p ●° p. |
| 24 | 26.7 | 23.9 | 85 | 97 | 10 | 10 | 95.2 | ●² a. ● p. |
| 25 | 28.3 | 23.5 | 82 | 90 | 10 | 10 | 26 | ↙° ● a. p. |
| 26 | 28.4 | 24 | 96 | 91 | 10 | 10 | 54.6 | ● a p. ⌒² p. |
| 27 | 32.8 | 23.8 | 97 | 63 | 3 | 5 | 4.8 | ● p. |
| 28 | 31.4 | 24 3 | 97 | 69 | 10 | 10 | 14.7 | ⛈ ● p. |
| 29 | 31.3 | 23.6 | 98 | 75 | 7 | 8 | -------- | ⌒² d° p. |
| 30 | 31.4 | 24.9 | 94 | 71 | 2 | 8 | -------- | ⊤ d° p. |
| 31 | 30.3 | 24.4 | 97 | 79 | 10 | 10 | 126.8 | d² a. p. ●² p. |
| Mean | 31.5 | 23.9 | 91.3 | 71 | 6.4 | 7.8 | -------- | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1,083.9 | |

### SANTO DOMINGO.
[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 26.2 | 87 | 77 | 8 | 7 | 15 | ● ⌒°a. p. ↙° p. |
| 2 | 29.8 | 25.5 | 83 | 79 | 9 | 9 | 2.9 | ↙° ● a. p. |
| 3 | 31 | 26.8 | 83 | 74 | 7 | 7 | 5.6 | ↙° a. p. ϟ° ● p. |
| 4 | 31.3 | 24.3 | 86 | 82 | 8 | 7 | 20.3 | ●² a. d° ∪² ϟ°p. |
| 5 | 31.4 | 25.6 | 86 | 76 | 6 | 6 | ------ | ɑ° Ω² p. |
| 6 | 31.3 | 24 | 91 | 68 | 3 | 3 | ------ | v a. Ω a. p. |
| 7 | 31.7 | 25.8 | 81 | 71 | 1 | 4 | ------ | v a. Ω p. |
| 8 | 32.1 | 25.3 | 89 | 75 | 4 | 3 | ------ | v a Ω p. |
| 9 | 31.4 | 24.7 | 91 | 72 | 0 | 3 | 33 | v a. |
| 10 | 30.3 | 24 | 92 | 77 | 10 | 6 | 1 | ●² a. ◯° p. |
| 11 | 31.2 | 26.8 | 81 | 78 | 5 | 4 | ------ | |
| 12 | 31.8 | 26.8 | 80 | 76 | 4 | 5 | ------ | Ω p. |
| 13 | 31.9 | 24 8 | 87 | 70 | 4 | 6 | 29.6 | Ω ●° a. |
| 14 | 30.8 | 25.3 | 90 | 78 | 10 | 10 | 41.5 | ↙° ● a. p. d p. |
| 15 | 28.9 | 24.7 | 91 | 85 | 10 | 10 | 54.9 | ● ↙° a. p. d² p |
| 16 | 26.8 | 24.2 | 89 | 92 | 10 | 10 | 122.5 | ↙° ●² a. p. |
| 17 | 30 | 24 | 95 | 92 | 10 | 10 | 33.5 | ● d a. |
| 18 | 30.8 | 24.2 | 90 | 76 | 10 | 10 | 7.3 | ● a. ●° p. |
| 19 | 30.2 | 23.8 | 92 | 89 | 10 | 9 | 28.9 | ɑ²⊤ ↙° ●a ●²p. |
| 20 | 30.9 | 24.9 | 89 | 82 | 8 | 7 | 9.4 | ●² a. ϟ d p. |
| 21 | 31 | 26.2 | 87 | 81 | 7 | 7 | 2 | d° ϟ° ● p |
| 22 | 31 | 25.7 | 86 | 78 | 5 | 7 | ------ | ● d° a. ϟ° p. |
| 23 | 31 | 25.7 | 83 | 72 | 4 | 3 | 4.6 | |
| 24 | 31 | 24.8 | 86 | 76 | 5 | 4 | 3.9 | ● a. p ϟ ⊤ p. |
| 25 | 29.8 | 24.5 | 84 | 84 | 8 | 10 | 5 | ↙° ●° a d² p. |
| 26 | 30.9 | 25.6 | 90 | 83 | 10 | 0 | .2 | d² a. Ω² p. |
| 27 | 31.8 | 25 | 92 | 77 | 4 | 8 | .5 | d²a. ⊤ d° ϟ° Ω°p. |
| 28 | 31 | 25 | 91 | 79 | 10 | 7 | 3.2 | ●° a Ω p. |
| 29 | 31 3 | 23.4 | 93 | 76 | 0 | 4 | ------ | Ω a. p |
| 30 | 31.9 | 23.5 | 93 | 76 | 2 | 5 | ------ | Ω a. p |
| 31 | 30.9 | 25 | 87 | 79 | 10 | 8 | 18.8 | d² a. ● ↙° p. |
| Mean | 30.9 | 25 | 87.9 | 78.4 | 6.5 | 6.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 443.6 | |

U of M

# SEISMOLOGICAL BULLETIN FOR JULY, 1911

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By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

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## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

3, $0^h$ $9^m$ $57^s$.* **Nueva Caceres** (SE of Luzon). Oscillatory earthquake. Direction NNE–SSW, intensity III, Duration 5 seconds.

7, $18^h$ $47^m$. **Laoag** (NW of Luzon). Earthquake of force II.

16, $4^h$ $38^m$. **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction ENE–WSW, intensity III, duration 6 seconds.

19, $11^h$ $30^m$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

22, $4^h$ $36^m$. **Zamboanga and Basilan.** Oscillatory earthquake of force IV; direction of shocks SW–NE, duration 8 seconds.

24, $11^h$ $36^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

25, $12^h$ $15^m$. **San Fernando, Union** (NW of Luzon). Oscillatory earthquake, direction WSW–ENE, intensity III, duration 3 seconds.

28, $6^h$ $30^m$. **Sarangani** (S of Mindanao). Earthquake of force II.

30, $18^h$ $2^m$. **Baguio** (W of Luzon). Oscillatory earthquake of intensity III, lasting 5 seconds; direction of shocks NNE–SSW.

NOTE.—The earthquake which occurred in Mindanao on July 12, together with its repetitions and aftershocks during July and August, will be found discussed at the end of this Bulletin.

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[h] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

## RECORDS OF THE MICROSEISMOGRAPHS.

**(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.h)**

| No. | Date. | Character. | Instrument and component. | | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | | h. m. s. | h. m. s. | h. m. s. | h. m. s. | mm. | s. | h. m. | |
| 142 | 1 | $\mathrm{I_d}$ | W. | N | 2 37 20 | ---------- | 2 37 49 | 2 38 35 | 0.04 | 4.8 | 2 41 | Vertical Component 0.03 mm. |
| 143 | 3 | $\mathrm{I_v}$ | V. | | 0 09 57 | ---------- | 0 10 20 | 0 10 32 | .05 | 2.4 | 0 13 | V. C. 0.02 mm. Earthquake, III at Nueva Caceres (SE of Luzon). |
| 144 | 4 | I | H. | NNW | 5 49 18 | ---------- | 5 51 50 | 5 53 48 | .15 | 7.5 | 6 18 | |
| | | | H. | WSW | 5 49 18 | ---------- | 5 51 53 | 5 56 40 | .46 | 8.4 | 6 26 | |
| | | | W. | N | 5 49 25 | ---------- | 5 51 54 | 5 53 52 | .08 | 7 | 6 22 | |
| 145 | 4 | $\mathrm{I_d}$ | V. | | 17 42 10 | ---------- | 17 42 36 | 17 42 43 | .10 | 2.4 | 17 46 | V. C. 0.03 mm. |
| 146 | 4 | $\mathrm{II_u}$ | V. | | 21 42 01 | 21 49 00 | 21 53 40 | 21 56 24 | .02 | 6.8 | 22 37 | V. C. 0.02 mm. Asia, Tashkent. |
| | | | H. | NNW | 21 42 02 | 21 49 01 | 21 54 07 | 21 57 09 | .11 | 8.1 | 22 32 | |
| | | | H. | WSW | 21 42 02 | 21 49 02 | 21 53 35 | 21 57 13 | .60 | 8.4 | 22 51 | |
| | | | W. | N | 21 42 11 | 21 49 10 | 21 53 45 | 21 57 06 | .06 | 10 | 22 40 | |
| | | | W. | E | 21 42 11 | 21 49 11 | 21 54 16 | 21 57 24 | .05 | 10 | 22 38 | |
| 147 | 5 | $\mathrm{I_r}$ | V. | | ---------- | ---------- | 10 38 58 | 10 43 17 | .04 | [illegible].2 | 11 00 | V. C. 0.02 mm. |
| | | | H. | NNW | ---------- | ---------- | 10 38 59 | 10 43 25 | .40 | 7.5 | 11 02 | |
| | | | H. | WSW | ---------- | ---------- | 10 38 59 | 10 43 22 | .48 | 8.4 | 11 10 | |
| | | | W. | N | ---------- | ---------- | 10 39 03 | 10 43 32 | .11 | 8 | 11 06 | |
| | | | W. | E | ---------- | ---------- | 10 39 03 | 10 43 28 | .09 | 7.2 | 11 06 | |
| 148 | 6 | $\mathrm{II_d}$ | V. | | 2 44 45 | ---------- | 2 45 14 | 2 46 11 | 1.12 | 2.4 | 3 04 | V. C. 0.70 mm. |
| 149 | 8 | $\mathrm{I_d}$ | V. | | 2 07 15 | ---------- | 2 07 43 | 2 07 45 | .02 | 2.4 | 2 09 | |
| 150 | 8 | I | H. | WSW | 9 45 45 | ---------- | ---------- | ---------- | ---------- | ---------- | 10 10 | |
| 151 | 9 | $\mathrm{I_d}$ | V. | | 7 25 51 | ---------- | 7 26 30 | 7 26 47 | .12 | 2.4 | 7 28 | |
| 152 | 11 | $\mathrm{I_d}$ | V. | | 1 10 00 | ---------- | 1 10 20 | 1 10 34 | .02 | 2.4 | 1 12 | |
| 153 | 12 | $\mathrm{I_r}$ | V. | | 5 31 29 | ---------- | 5 38 44 | 5 39 19 | .02 | 6 | 5 57 | |
| | | | H. | WSW | 5 31 30 | ---------- | 5 38 45 | 5 59 15 | .14 | 7.8 | 6 10 | |
| | | | W. | N | 5 31 35 | ---------- | 5 38 48 | 5 39 18 | .01 | 8.8 | 6 05 | |
| 154 | 12 | I | H. | WSW | ---------- | ---------- | 9 49 41 | 9 55 32 | .06 | 8.4 | 10 12 | |
| 155 | 12 | $\mathrm{III_v}$ | V. | | 12 09 44 | ---------- | 12 10 54 | 12 12 01 | 1.80 | 2.4 | 14 30 | V. C. 0.40 mm. Eqke., VIII-IX, Agusan River Valley, eastern Mindanao. |
| | | | H. | WSW | 12 09 44 | ---------- | 12 10 51 | ---------- | ---------- | ---------- | 15 12 | |
| 156 | 12 | $\mathrm{II_r}$ | V. | | 16 03 26 | 16 07 06 | 16 10 20 | 16 12 25 | .03 | 10.4 | 17 24 | |
| | | | H. | NNW | 16 03 26 | 16 06 46 | 16 10 46 | 16 13 36 | .83 | 8.1 | 17 43 | |
| | | | W. | E | 16 03 26 | 16 06 42 | 16 10 00 | 16 14 18 | .18 | 9.2 | 17 31 | |
| 157 | 13 | $\mathrm{I_r}$ | H. | WSW | ---------- | 16 42 42 | 16 45 37 | 16 49 34 | .10 | 12.6 | 17 17 | NE sea of Formosa. |
| 158 | 14 | $\mathrm{I_v}$ | H. | WSW | 9 47 22 | ---------- | 9 49 24 | 9 52 43 | .39 | 9.3 | 10 45 | Eqke., III, Agusan River Valley, aftershock. |
| 159 | 16 | $\mathrm{I_d}$ | V. | | 13 00 43 | ---------- | 13 00 57 | 13 01 11 | .36 | 2.4 | 13 06 | V. C. 0.24 mm. |
| 160 | 19 | I | H. | WSW | 18 12 10 | ---------- | ---------- | ---------- | ---------- | ---------- | 19 15 | V. C 0.02 mm. |
| 161 | 20 | $\mathrm{II_v}$ | V. | | 4 22 55 | ---------- | 4 25 13 | 4 29 01 | .08 | 12 | ---------- | V. C. 0.01 mm. Eqke., III, Agusan River Valley, aftershock. |
| | | | W. | E | 4 22 53 | ---------- | 4 25 04 | 4 28 38 | .70 | 8 | ---------- | |
| 162 | 20 | $\mathrm{I_r}$ | V. | | ---------- | 5 23 00 | 5 25 09 | 5 26 28 | .02 | 11.6 | 6 28 | V. C. 0.01 mm. |
| | | | H. | NNW | ---------- | 5 23 00 | 5 25 09 | 5 26 57 | .20 | 10.5 | 6 55 | |
| 163 | 21 | $\mathrm{I_v}$ | V. | | 18 59 39 | ---------- | 19 01 27 | 19 04 52 | .02 | 4.8 | 19 32 | Eqke., IV, Agusan River Valley, aftershock. |
| | | | H. | NNW | 18 59 39 | ---------- | 19 01 31 | 19 04 04 | .11 | 7.5 | 19 24 | |
| 164 | 22 | $\mathrm{I_d}$ | V. | | 8 13 47 | ---------- | 8 14 22 | 8 14 56 | .05 | 2.4 | 8 18 | V. C. 0.03 mm. |
| 165 | 22 | I | H. | NNW | ---------- | 11 13 56 | ---------- | ---------- | ---------- | ---------- | 11 45 | |
| 166 | 22 | $\mathrm{I_v}$ | V. | | 13 18 55 | ---------- | 13 20 52 | 13 22 10 | .08 | 2.4 | 14 12 | V C. 0.02 mm. Eqke., IV, Agusan River Valley, aftershock. |
| | | | W. | N | 13 19 00 | ---------- | 13 20 45 | 13 23 08 | .05 | 12.4 | 14 11 | |
| 167 | 22 | $\mathrm{I_d}$ | V. | | 17 49 07 | ---------- | 17 49 19 | 17 49 34 | .03 | 2.4 | 17 52 | V. C. 0.01 mm. |
| 168 | 28 | $\mathrm{I_d}$ | V. | | 10 19 35 | ---------- | 10 19 45 | 10 19 53 | .03 | 2.4 | 10 22 | V. C. 0.02 mm. |
| 169 | 28 | $\mathrm{I_d}$ | V. | | 10 46 38 | ---------- | 10 46 49 | 10 46 51 | .05 | 2.4 | 10 50 | V. C. 0.02 mm. |
| 170 | 30 | $\mathrm{I_r}$ | H. | NNW | 19 54 42 | ---------- | 19 57 18 | 19 58 05 | .05 | 9.6 | 20 36 | |
| 171 | 30 | I | H. | WSW | ---------- | ---------- | 21 52 29 | ---------- | ---------- | ---------- | 22 11 | |
| 172 | 31 | $\mathrm{I_r}$ | H. | NNW | 8 11 55 | ---------- | 8 14 37 | 8 14 44 | .16 | 7.8 | 8 28 | |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW-SSE pendulum, T=8.1 seconds; WSW-ENE pendulum, T=8.7 seconds. Magnification of the record: NNW-SSE, 15 times; WSW-ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N-S component; E=E-W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

3, $0^h$ $09^m$ $57^s$.* **Nueva Cáceres** (SE de Luzón). Temblor oscilatorio, dirección NNE–SSW, intensidad III, duración 5 segundos.

7, $18^h$ $47^m$. **Laoag** (NW de Luzón). Temblor de tierra de intensidad II.

16, $4^h$ $38^m$. **Tacloban** (NE de Leyte). Temblor oscilatorio, dirección ENE–WSW, intensidad III, duración 6 segundos.

19, $11^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

22, $4^h$ $36^m$. **Zamboanga y Basilan.** Temblor oscilatorio, dirección SW–NE, intensidad IV, duración 8 segundos.

24, $11^h$ $36^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

25, $12^h$ $15^m$. **San Fernando, Unión** (NW de Luzón). Temblor oscilatorio, dirección WSW–ENE, intensidad III, duración 3 segundos.

28, $6^h$ $30^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

30, $18^h$ $02^m$. **Baguio** (W de Luzón). Temblor oscilatorio, dirección NNE–SSW, intensidad III, duración 5 segundos.

NOTA.—La relación del terremoto de Mindanao del día 12, y de las repeticiones ó aftershocks que le siguieron en Julio y Agosto se encontrarán al fin del Boletín.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

# THE EARTHQUAKE OF THE AGUSAN VALLEY AND THE EASTERN COAST OF MINDANAO, JULY 12, 1911.

The Agusan River Valley and the region to the east of it as far as the coast of the Pacific Ocean, constitute that part of the Philippine Archipelago which at present shows the greatest seismic activity, both as to number and intensity of disturbances. In June, 1893, and again in the same month of 1894, the Agusan district experienced the severest seismic upheavals recorded in the annals of the valley. During the seventeen years which have passed since then, no fewer than 16 earthquakes have occurred in the same territory whose intensities lay between degrees VI and IX of the scale. On the eastern coast of Mindanao the most recent earthquake of force VIII took place in March, 1909. The greater number of these earthquakes of the Agusan make themselves felt chiefly, and possibly even have their origin, near the central part of the valley, which is characterized by a broad expanse of level, marshy ground, partly occupied by three principal lakes of permanent character which, however, in times of extraordinarily heavy rainfall coalesce into one having a length of about 50 kilometers and a maximum width of some 20 kilometers. This entire region subsided considerably on the occasion of the earthquakes of 1893 and 1894, whereby large tracts of wooded and partly cultivated land were converted into swamps, though formerly the water reached them only during the highest floods. This region is undoubtedly the most unstable portion of the line of fracture which runs along the Agusan Valley and extends beyond it in the direction of the Davao Gulf in the south, and Leyte Island in the north. In this same region of the lakes a second, less important fault-line seems to meet the one mentioned, or to cross it. This secondary line of fracture runs from the valley across the eastern range of elevations and, following a W–E direction, extends toward the Great Trough of the Pacific of more than 8,000 meters' depth, which lies about 90 kilometers off the coast. The existence of such secondary fault seems to be established by the earthquake of March, 1909,[1] and many others which could be traced to the same origin. But as we have only recently described these two fault-lines in a paper under the title "The Seismic Centers of Samar, Leyte, and Eastern Mindanao,"[2] we refer the reader to the latter, and proceed to describe the most recent earthquake which took place in that region.

**Time.**—At Manila the earthquake of July 12 was registered at $12^h\ 9^m\ 44^s$ Insular time (one hundred and twentieth meridian east of Greenwich); hence, on the Agusan, or along the epicentral line whose middle portion is at a distance of some 900 kilometers from Manila, it must have occurred at $12^h\ 8^m\ 6^s$, or thereabout. It is impossible to ascertain the instant of its occurrence even approximately from the reports received at the Observatory, since this part of Mindanao has no telegraphic connection with the rest of the Archipelago, nor any other adequate means for keeping correct time.

**Intensity.**—A fair idea of the intensity of the earthquake may be gained from the reports sent to the Central Observatory from a number of places; some of them situated within the valley itself, like Talacogon, La Paz, Bunauan, Veruela, and Butuan; others at some distance from it, as Hinatuan, Boston, Baganga, Caraga, and Davao to the east and south, Cagayan to the northwest, Nasipit and Cabarbaran to the north-northwest and north.

*Talacogon.*—The Rev. Salvator Giralt, S. J., writes: "While we were dining (after 12 o'clock noon), there took place a very violent earthquake which wrought great havoc in the convento and church. The creaking of the beams was something awe-inspiring; doors and windows were wrenched from their hinges. Both, in the church and in the house, not only light objects, but also quite heavy pieces of furniture were rolling about on the floor, statues of the altars, candlesticks, cumbersome chests, pictures, jugs and jars, etc., everything going to pieces! The houses in the town remained tilted to one side. Never since I came to the Philippines in 1894, had I experienced an earthquake of equal violence and duration."

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[1] Weather Bureau, "Bulletin for March, 1909." [2] Weather Bureau, "Bulletin for August, 1910."

The supervising teacher of Talacogon, Mr. Macario Torralba, in a note received later adds the following particulars. The earthquake threw down many big trees; in the hemp plantations placed on sloping ground numerous and extensive land slidings were produced, some of them carrying down five hundred and more plants (these plants are set in ranges some 3 meters apart, thus each hectare contains from 800 to 1,000 plants); similar and even greater slidings are seen from Talacogon on the nearest hills of the east. The damage caused by the earthquake both to houses and ground was found to be equally serious in all the barrios visited by said supervisor; most of the houses being overthrown in the E–W direction. He further states that the most violent movements were preceded by weak vibrations during a very noticeable interval, the earth remaining about three minutes in continuous motion. Some people told him that in one of the lakes the high waves produced by the earthquake invaded the shore and penetrated far into the land.

*La Paz.*—The Rev. Christopher Sastre, S. J., who happened to be traveling in a boat on the river at the time of the earthquake, writes: "Suddenly there arose some waves of such dimensions and confused directions that the oarsmen needed all their skill and strength to prevent the capsizing of the boat. Soon we reached the village of La Paz, where I found church and house unroofed and the walls fallen to the ground, which forced me to seek shelter in a private hut. Many dwellings remained permanently tilted and were in bad shape, while three had been destroyed completely. The ground showed many and large cracks. The people of the place say that already on the 11th they had felt some weak shocks." It must be borne in mind that the church and houses mentioned in the preceding lines were constructed of wood, bamboo, and nipa.

*Bunauan.*—Regarding this village and the region of the lakes and marshes, it is known that the banks of the river and other water courses caved-in in many places, carrying with them trees and other obstructive material and blocking the navigable channels to such an extent that the governor of the Province of Agusan requested authority to expend the sum of ₱500, this being the estimated cost of clearing the channels which connect Bunauan with Clavijo and Veruela.

*Veruela.*—Some inhabitants of this place furnished to our observer at Butuan the following details: "When it was time to eat (noon), there occurred an earthquake of frightful force; the ground moved so violently that the swaying houses remained at the end permanently inclined, none, however, collapsed. (They are, without exception, constructed of bamboo and wood, held together by rattan.) The ground showed waves like those of water, and the commotion of the waters of the river was something imposing. Everybody was convinced that the village would be utterly destroyed as had happened in 1893. The terror was increased by a thunderstorm which raged at the same time. The ground was fissured everywhere and in many places of the river formed quite extensive banks of mud and sand, leaving not enough depth even for small boats. During three days the river water was so muddy that it could not be used for any household purposes, which caused great hardships. After the great quake the earth continued to tremble frequently during several days, which circumstance kept alive the fear that after all the place might be doomed to destruction. Soon rumors were current that the earthquake had been much more disastrous at Hinatuan, where nearly all the houses had been destroyed.

*Butuan.*—The observer at Butuan, Mr. Generoso Copin, sent us the following report: "Violent earthquake of oscillatory and trepidatory character; observed directions: S–N, SW–NE, and ESE–WNW; duration about two minutes. At first nobody took much notice of the phenomenon, as for many seconds the movements were of little intensity, objects swaying but slightly. But thereafter the earth shook so violently that everybody rushed into the streets in terror, the violent movements lasting about 50 seconds. Within the houses everything moveable went skidding about the floor. Nearly all the houses were damaged and even in the church and convento portions of partition walls came down which were of masonry with wooden trusses, the greatest damage being on the west side. Two houses of the town fell toward north and the upright posts of one were lifted about one foot out of the ground in which they were imbedded. The latter fact proves that there were also vertical movements. Of a variety of objects, such as pictures, chairs, lamps, etc., some were thrown toward east, others toward west. Some large trees whose trunks were partly rotten, came down. Several fissures opened in the direction NE–SW. Some people who were washing in the river, say that at first the water rushed from the western to the eastern bank and then back again, the agitation being so violent that a huge log which was floating in the water secured by a thick rattan, broke its mooring and was carried away by the waves."

*Hinatuan, Boston, Baganga, Caraga.*—Concerning these places, all of which lie on the Pacific coast, we have only the following brief notes couched in general terms, sent us by the Rev. Bernard Llobera, Jesuit missionary at Caraga, which, however, enable us to estimate the intensity developed by the earthquake in that region. He says: "On the 12th we had an earthquake such as I do not remember having ever before experienced. The shocks appear to have come from several directions, as the bells and lamps of the church had a circular motion. The earthquake was even more severe to the north of Caraga. At Baganga it opened two fissures close to the wharf; at Boston it brought to the ground a massive stone wall which formed the façade of the church and had a thickness exceeding 2 "varas" (1.68 meters). It is said that the earthquake showed still greater violence at Hinatuan, but I have no details."

*Davao.*—Regarding the town of Davao, situated on the northwestern shore of the gulf of the same name, the observer in charge of the station reports that the earthquake was very strong: it stopped clocks, caused church bells to ring, and produced general alarm, principally on account of its long duration of one minute and five seconds. It had, however, no evil consequences. From the record traced there by a pendulum seismograph we learn that the movements were mainly in the directions NNW–SSE, NNE–SSW, and ENE–WSW. In the daily papers it has been stated that the earthquake was much more violent on the northeastern side of the gulf, where it damaged buildings and opened fissures in the ground. Hence, it must have had greater intensity in that region than at Caraga.

*Cagayan (Misamis).*—A note from the Jesuit missionaries stationed there says: "An earthquake of long duration, though not very strong, as it did not throw down any objects. The sway of the heads of the coconut palms seemed to be from SSE or S to NNW or N. The duration was such that there was plenty of time to leave the room, descend the stairs and go into the yard while the earth still continued to tremble."

*Nasipit and Cabarbaran.*—The observer at Butuan, whom we mentioned before, adds in a second note that several persons from Nasipit and neighboring places, situated in the northwestern part of the Agusan Province, told him that the earthquake was very strong and of long duration, but did not damage buildings, though it made a great noise in them and still more so in the woods which cover the nearby mountains lying to the west of those places. From Cabarbaran, which is east of Butuan Bay, comes practically the same information—the earthquake was strong and prolonged without doing any damage; the trees swayed violently, and the abacá plants rocked until the leaves appeared to touch the ground.

We found it impossible to obtain any information concerning the villages on the northeastern coasts of Mindanao, between Hinatuan and Surigao, our requests for same having remained unanswered. The fact, however, that our observer at Surigao, the provincial capital, has heard nothing of any extraordinary occurrences in this region is sufficient reason for assuming that the earthquake was there much less intense than in the villages of the Agusan Valley situated on the same parallels.

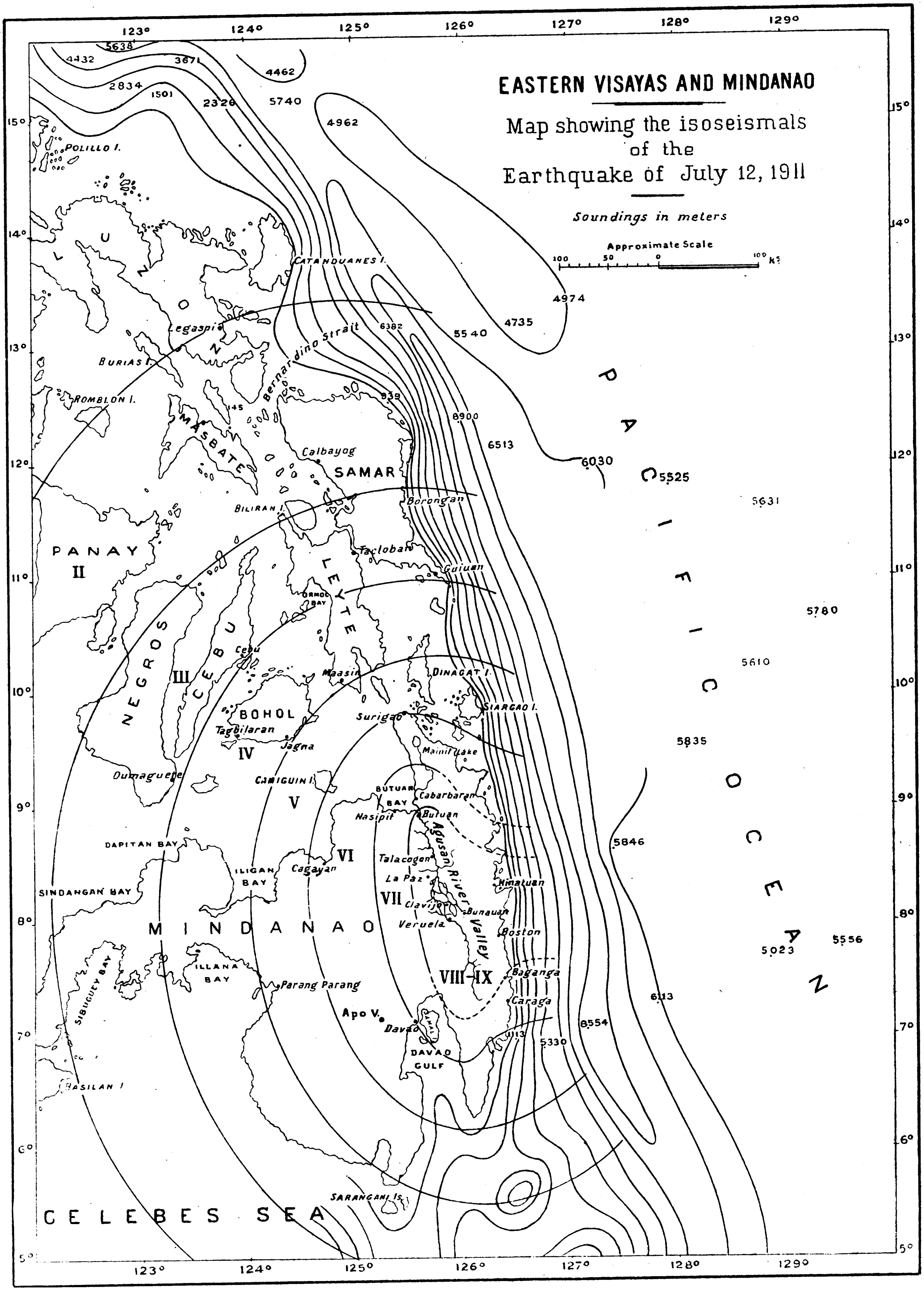
All the places mentioned lie within 150 kilometers from the central region of the Agusan Valley; beyond this zone the earthquake was much less violent, but of extraordinary duration. In the following table we give the direction, force, and duration of the seismic movements as observed in various localities beyond the 150-kilometer limit. After each place we add its approximate distance and bearing from the middle region of the Agusan Valley.

| Place. | Distance and bearing from the center. | | Observed direction of movements. | Intensity. | Duration. | |
|---|---|---|---|---|---|---|
| | *Kms.* | | | | *m.* | *s.* |
| Surigao | 175 | N | ESE–WNW, SSW–NNE | V | 1 | 30? |
| Parang (Cotabato, D.) | 200 | WSW | | IV | | |
| Jagna (Bohol) | 230 | WNW | SW–NE | IV | 0 | 37 |
| Maasin (Leyte) | 240 | NNW | SE–NW | IV | 0 | 30 |
| Tagbilaran (Bohol) | 260 | NW | | IV | | |
| Sarangani | 310 | SSW | | IV | | |
| Dumaguete | 312 | WNW | | III | 0 | 20 |
| Cebu | 320 | NW | S–N | III | 0 | 40 |
| Guiuan (Samar) | 320 | N | E–W | III | 0 | 15 |
| Ormoc (Leyte) | 330 | NNW | S–N, SSE–NNW | III | 0 | 15 |
| Tacloban (Leyte) | 330 | NNW | ENE–WSW | II | 0 | 10 |
| Borongan (Samar) | 380 | N | | II | 0 | 20 |
| Calbayog | 440 | NNW | ENE–WSW | II | 0 | 7 |
| Legaspi | 570 | NNW | | II | 0 | 8 |

**Isoseismic curves.**—From the preceding data we may conclude that the isoseismal VIII–IX inclosed the entire middle reaches of the Agusan Valley, the eastern coasts of the island between Baganga and Lianga (north of Hinatuan), and, if the press notices are true, also the region northeast of Davao Gulf, Plate VII. As regards the eastern coast, we cannot vouch for the fact that the disturbance was really of such violence there, since we do not know the condition of the thick wall which tumbled down at Boston, nor the nature of the ground in which fissures opened at Baganga. It is, however, very probable that it had the same intensity there as it had in the Agusan Valley itself where, to judge from the effects which we have mentioned, it was comprised at least between degrees VIII and IX. This gives to the meizoseismic area a very irregular shape, as it includes a zone along the Agusan River running in the direction NNW–SSE from Butuan to the northeastern coast of Davao Gulf, and a second, much shorter zone, comprising the coast and eastern mountain range lying between the parallels of Baganga and Lianga. To explain this irregular form, it is necessary to assume that dislocations took place in the two fault-lines mentioned in the beginning of this paper; the one running along the Agusan Valley, and the other, of secondary character and almost perpendicular to the former, from the Agusan toward the Great Trough of the Pacific.

The principal reason which moves us to believe that some movements occurred also in this secondary line, lies in the fact that the earthquake of July 12th was felt on Palau Island, Western Carolines (134.6° longitude E; 7.5° latitude N), which lies about 900 kilometers from the eastern coasts of Mindanao. According to a communication from the Reverend Capuchin missionaries on the island, there were felt on that day, at about $13^h$ (that is 12 o'clock noon, or a little later, time of the one hundred and twentieth meridian) seismic oscillations in the direction WNW–ESE, which were of intensity III and lasted about 10 seconds. We can hardly doubt that the Palau earthquake was identical with the one of Mindanao and the Visayas and, hence, that the two fracture

Plate VII.



EASTERN VISAYAS AND MINDANAO

Map showing the isoseismals of the Earthquake of July 12, 1911

Soundings in meters

lines in question entered into action. There only remains to investigate in which of the two the movement started. The observer at Butuan, situated at the northern extremity of the meizoseismic area, reports that the earthquake began with weak movements which lasted many seconds, giving the people time to become conscious of them and to disregard them in the belief that they were the ordinary tremblings so frequent in that region. These preliminary movements were followed by violent shocks having the extraordinary duration of 50 seconds. Similar indications are made by the reporter of Talacogon. This would seem to indicate that the origin of the preliminary tremors was at a considerable distance from Butuan and even from Talacogon; hence, it may well be that the disturbance started along the Pacific fault-line and was communicated to that of the Agusan. This would likewise explain the long duration of the earthquake. Unfortunately we have no confirmation of these deductions, as neither the times assigned to the phenomenon by the observers stationed in Mindanao, nor the seismograms traced by the Manila instruments serve for the purpose, especially as the latter make the point of origin of the disturbance appear to have been much nearer than it was in reality, a circumstance which is due to the fact that the earthquake was well perceptible up to a distance of 340 kilometers from Manila. Nor can the directions of the seismic waves serve as guides: as is usually the case during violent earthquakes, they were everywhere of very complex character. Thus at Butuan, the water of the river rushed toward the eastern bank at the beginning of the violent shocks, the principal fissures ran in the direction NE–SW, and the pendulum seismograph registered violent motions in the directions NE–SW, ESE–WNW, and S–N. From Caraga we are informed that suspended objects swung in circular paths. The curves of the pendulum seismograph at Davao show the greatest oscillations to have been in the directions NNW–SSE, NNE–SSW, and ENE–WSW, those in the last-named direction having been the most persistent. If there really were movements along both faults, as it seems to have been the case, the movement in the Pacific line must either have started far from the east coast of Mindanao, or have propagated itself a great distance toward east, otherwise it would not have been possible to be felt in the Pelew group of islands.

The isoseismals VII and VI enclose a zone of about 100 kilometers in width all around the meizoseismic area, thus comprising a great part of the north, center, south, and southeast of Mindanao.

The outermost isoseismal, corresponding to degree II, extends toward north and northwest as far as the southeastern end of Luzon, encloses the islands of Samar, Cebu, and Negros, and crosses Mindanao near the meridian 122° east. Hence, if we assume the central portion of the Agusan Valley as the center of the disturbance, the earthquake was perceptible toward north up to distances exceeding 500 kilometers, but only of about 400 kilometers toward west. Toward south, the farthest station from which we have information is Sarangani which is only about 310 kilometers from the supposed origin and was comprised within the isoseismal IV. This earthquake has been registered by the seismographs throughout the world.

**Repetitions or aftershocks.**—These were very numerous during the whole afternoon and night of the 12th and likewise during the following two days, July 13 and 14. Then their frequency decreased considerably, especially toward the end of the month, though they were still quite numerous during August and in the beginning of September, and have not yet ceased entirely at the date of writing (September 20). Unfortunately there is at present, with the exception of Butuan, no meteorological station in the Agusan Valley, nor on the eastern coasts of Mindanao, which, as stated, were the regions most affected by the earthquake. Hence, we cannot present a complete list even of the stronger repetitions. Butuan is situated at the northern extremity of the valley, some 50 kilometers from the place where the two faults probably meet, and it is clear that many of the less severe aftershocks originating at the juncture were not perceptible at so great a distance. Consequently, the list furnished by the observer at Butuan must be considered as containing only some of the more intense disturbances whose waves were perceptible at a distance of more than 50 kilometers. Thus, for instance, during the afternoon of the 12th as many as 20 aftershocks have been counted at Talacogon and they were innumerable at La Paz; yet at Butuan only 8 have been recorded. According to a report from La Paz, the aftershocks were there very frequent on the 13th and similarly at Talacogon, but at Butuan only two were perceived, etc. From Bunauan we are informed under date of July 17th that earthquakes have been very frequent in that place during those days.

Some idea of the frequency wherewith the repetitions took place in the region of Talacogon during July and August may be gained from two remarks which a missionary of the place added at the end of lists of the more important aftershocks. In the first, dated July 27th, he inquires whether the frequent, nay well-nigh continuous tremors were perhaps the heralds of a fresh destructive earthquake; in the second, written about the end of August, he states that earthquakes were still being felt almost continually. In the following table we present the list of aftershocks recorded at Butuan, to which we add under "Remarks" some of the principal disturbances observed at Talacogon. Of some of the latter the hour and intensity are known, while others have been reported only in general terms:

AFTERSHOCKS FELT AT BUTUAN, JULY 12 to AUGUST 30.

| Day. | Hour. | | Duration. | Intensity. | Direction. | Remarks. |
|---|---|---|---|---|---|---|
| | *h.* | *m.* | *s.* | | | |
| July 12 | 13 | 12 | | III | | Long duration. |
| July 12 | 13 | 35 | | III | | Short duration. |
| July 12 | 15 | 00 | | III | | Do. |
| July 12 | 16 | 00 | | III | | Do. |
| July 12 | 16 | 10 | | IV | | Long duration. |
| July 12 | 18 | 00 | | II | | Short duration. |
| July 12 | 20 | 35 | 30 | III | | At Talacogon 20 aftershocks were recorded during the same afternoon and evening. |
| July 13 | 4 | 30 | | III | SW-NE, ESE-WNW | |
| July 13 | 8 | 20 | | II | | Talacogon and La Paz report very frequent aftershocks during this and the following day and many on the 15th. |
| July 14 | 3 | 26 | 27 | IV | SE-NW, E-W | |
| July 14 | 9 | 47 | 25 | IV | S-N, SE NW | Registered at Manila. |
| July 16 | 10 | 11 | 10 | II | | Three or four reported from Talacogon. |
| July 18 | 1 | 57 | 8 | III | SSW-NNE | Four at Talacogon. |
| July 20 | 4 | 22 | 50 | VI | ENE-WSW | Two aftershocks shortly after. Registered at Manila. Felt at Davao. Talacogon reports many other slight quakes. |
| July 21 | 18 | 59 | 20 | IV | | |
| July 22 | 13 | 18 | 35 | IV | | Registered at Manila. Talacogon reports four shocks this day and three the following two days. |
| July 24 | 22 | 20 | 4 | II | ESE-WNW | |
| July 26 | 14 | 24 | 17 | III | SE-NW | Talacogon reports quakes at $12^h$ $55^m$ III, $14^h$ $24^m$ V, $15^h$ $00^m$ III, with some slighter ones. |
| July 31 | 4 | 00 | | III | SE-NW | Short duration. |
| July 31 | 15 | 38 | | II | | Do. |
| Aug. 3 | 17 | 01 | 24 | IV | ESE-WNW | |
| Aug. 10 | 10 | 45 | | III | SSW-NNE | |
| Aug. 15 | 4 | 54 | 37 | IV | SSW-NNE, S-N | Registered at Manila. Felt at Davao and Surigao. |
| Aug. 17 | 10 | 33 | 3 | II | | |
| Aug. 18 | 10 | 56 | 1 | VI | ESE-WNW, S-W | Registered at Manila. |
| Aug. 23 | 5 | 46 | 5 | III | ESE-WNW | |
| Aug. 25 | 11 | 33 | 30 | III | SSW-NNE | |
| Aug. 25 | 12 | 16 | 10 | II | S-N | |
| Aug. 27 | 22 | 00 | | II | | |
| Aug. 29 | 21 | 07 | | II | SSW-NNE | |
| Aug. 29 | 21 | 45 | 20 | III | S-N | |
| Aug. 30 | 3 | 54 | | II | | |

# EL TERREMOTO DEL VALLE DEL RÍO AGUSAN Y DE LA COSTA ORIENTAL DE MINDANAO, 12 DE JULIO DE 1911.

La región que comprende el valle del río Agusan y la costa oriental de Mindanao es actualmente la parte del Archipiélago donde los temblores de tierra se repiten con mayor frecuencia é intensidad. En Junio de 1893 y 1894 ocurrieron en el Agusan los más intensos terremotos que registran los anales del valle. Durante los 17 años transcurridos desde aquella fecha se han sentido en él no menos de 16 terremotos comprendidos entre las intensidades VI y IX de la escala. En la costa oriental el último de intensidad VIII tuvo lugar en Marzo de 1909. La mayor parte de los terremotos del Agusan se hacen sentir principalmente, y aún es posible tengan su origen, hacia el centro del valle, caracterizado por una extensión de terreno llano y pantanoso, donde existen tres principales lagos permanentes, los cuales en tiempo de lluvias extraordinarias se juntan y extienden hasta formar uno solo de cerca de 50 kilómetros de longitud por unos 20 de anchura máxima. Toda esta parte sufrió marcado descenso á causa de los terremotos de 1893 y 1894, convirtiéndose en pantano grandes extensiones de bosque y de tierras en parte cultivadas, á donde antes sólo llegaban las aguas en las más grandes avenidas. Esta es sin duda la parte más instable de la línea de fractura que corre á lo largo del valle y aún se extiende por el S hacia el Golfo de Davao y por el N hacia la Isla de Leyte. Á esta misma zona de los lagos, en las proximidades del paralelo 8.2° N y del meridiano 125.8° E, parece concurrir ó cruzar otra falla ó línea secundaria de fractura que, partiendo del valle atraviesa los macizos montañosos orientales y sigue en dirección W–E hacia la gran Fosa del Pacífico de más de 8,000 metros de profundidad, la cual se halla á unos 90 kilómetros de la costa. La existencia de esta falla secundaria parece comprobarla el terremoto de Marzo de 1909[1] y otros muchos que podrían referirse al mismo origen. Como recientemente describimos estas dos líneas seismotectónicas en un artículo titulado "Centros Séismicos de Sámar, Leyte y de la Parte Oriental de Mindanao"[2] á él remitimos al lector y pasamos á la descripción del último terremoto.

**Hora.**—En Manila se registró este terremoto á $12^h\ 9^m\ 44^s$ y en el Agusan ó sea en la línea epicentral, cuyo punto medio dista 900 kilómetros próximamente, debió tener lugar en las proximidades de $12^h\ 8^m\ 6^s$. No es posible deducirla ni aún aproximadamente de las notas recibidas por el Observatorio, á causa de estar esa parte de Mindanao sin comunicación telegráfica con el resto del Archipiélago y no tener medio preciso de arreglar los relojes.

**Intensidad.**—Esta se podrá deducir de las diferentes notas recibidas tanto de las poblaciones situadas en el mismo valle, Talacogon, La Paz, Bunauan, Veruela, y Butúan, como de otras más lejanas, Hinatúan, Boston, Baganga, Caraga, y Davao, situadas al E y S; Cagayán al NW; Nasípit y Cabarbarán al NNW y N.

*Talacogon.*—El R. P. S. Giralt, Misionero S. J., escribe: "Estando comiendo (después de las $12^h$ mediodía) ocurrió un terremoto muy violento que causó muchos destrozos en el Convento y la Iglesia. El crujir de las maderas era espantoso, las puertas y ventanas eran sacadas y arrancadas de sus goznes. Tanto en la Iglesia como en el Convento rodaron por el suelo toda clase de objetos pesados y ligeros: estatuas de los altares, candeleros, armarios grandes, cuadros, damajuanas y jarras, etc., destrozándose todo. En el pueblo las casas se quedaron inclinadas. Desde que llegué á Filipinas en 1894 no había experimentado un terremoto tan violento y largo."

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[1] Weather Bureau, "Bulletin for March, 1909. [2] Weather Bureau, "Bulletin for August, 1910."

El Maestro Inspector de Talacogon, D. Macario Torralba, añade en una nota recibida más tarde que el terremoto derribó varios árboles grandes; y que en los terrenos inclinados plantados de abacá se produjeron muchos resbalones de extensiones ocupadas por más de quinientas matas (estas plantas suelen colocarse en hileras separadas unos 3 metros entre sí, entrando de 800 á 1,000 plantas en una hectárea): iguales y aun mayores derrumbes se ven desde Talacogon en las vecinas colinas del E. En todos los barrios visitados por dicho Inspector encontró destrozos semejantes tanto en el terreno como en las casas, éstas generalmente se cayeron en la dirección E–W. Además hace notar que á los movimientos violentos del suelo precedieron suaves vibraciones durante un rato muy apreciable y que la tierra estuvo en movimiento unos 3 minutos. También añade que, según referencias, en uno de los lagos se formaron tan inmensas olas que se precipitaron sobre las riberas y llegaron á gran distancia tierra adentro.

*La Paz.*—Escribe el R. P. C. Sastre, Misionero S. J., quien se hallaba navegando por el río cuando ocurrió el terremoto: "Se levantaron unas olas tan grandes y encontradas que los remeros necesitaron de toda su habilidad y esfuerzo para que no se hundiera el bote. Al poco rato llegué al pueblecito de La Paz y encontré la Iglesia y casa destechadas y con las paredes caídas, de manera que hube de albergarme en una casita particular. Muchas casitas quedaron inclinadas y malparadas y tres completamente derrumbadas. El suelo está lleno de muchas y grandes grietas. Los vecinos de este pueblo aseguran que ya el 11 se sintieron algunos temblores de tierra de poca intensidad."—Nótese que se trata de casas é Iglesia de madera, caña y nipa.

*Bunauan.*—De este pueblecito y de la región de los lagos y pantanos se sabe que los bancos del río y de otros canales se derrumbaron en muchas partes arrastrando en su caída árboles y otras malezas, obstruyéndose los cursos navegables de tal manera que el gobernador de la Provincia de Agusan pide autorización para un gasto de ₱500, que calcula costará el trabajo de quitar las obstrucciones de los canales navegables que desde Bunauan conducen á Clavijo y Veruela.

*Veruela.*—Algunas personas de este pueblo dieron al observador de Butúan los siguientes pormenores: "Estando para comer á las 12 m. d. ocurrió el terremoto con una fuerza espantosa; movíase la tierra de tal manera que las casas en sus vaivenes se quedaban completamente inclinadas, ninguna sin embargo se tumbó, siendo todas de bambú y maderos atados entre sí con bejuco. La tierra formaba ondulaciones como las olas en el agua: la perturbación de las aguas del río era imponente. Toda la gente estaba creída que el pueblo se hundiría y destruiría como sucedió en 1893. Aumentaba el espanto la tormenta de truenos y rayos que en el mismo momento se desarrollaba. El suelo quedó agrietado en todas partes; en el fondo del río se formaron en muchos sitios extensos bancos de lodo y arena, donde no hay ahora fondo suficiente ni para los pequeños botes. Durante tres días estuvo el agua del río tan cenagosa que era imposible servirse de ella para los usos domésticos, causando esto grande incomodidad. Después de este grande terremoto continuó por varios días temblando la tierra con mucha frecuencia, de tal manera que no cesaba el temor de que por fin se hundiese el pueblo. Corrieron luego rumores de que el terremoto había sido mucho más desastroso en Hinatuan, donde quedaron destruídas casi todas las casas."

*Butúan.*—El observador de esta población, D. G. Copin, nos envía la siguiente nota: "Temblor violento oscilatorio y susultorio; notáronse las direcciones S–N, SW–NE y ESE–WNW; duró unos dos minutos. Al principio durante muchos segundos nadie hacía caso por ser los movimientos poco intensos y moverse poco los objetos; pero luego se sacudió de tal manera el terreno que todo el mundo se lanzó á la calle aterrorizado, durando los movimientos violentos unos 50 segundos. En las casas no quedó trasto alguno sin rodar por el suelo, casi todas quedaron con desperfectos. Aún en la Iglesia y en el Convento se cayeron algunos trozos de los tabiques de mampostería con crucetas de madera; los mayores desperfectos fueron en el lado W. Dos casas del pueblo se tumbaron hacia el N, y en una los postes ó harigues se salieron del suelo donde estaban empotrados más de un pié: esto prueba que hubo movimientos verticales. Varios objetos como cuadros, sillas, lámparas, etc., unos fueron arrojados hacia el E y otros hacia el W. Cayéronse también algunos troncos grandes de árboles ya carcomidos. Abriéronse varias grietas en dirección NE–SW. Personas que estaban lavando en el río aseguran que el agua en el primer momento se precipitó de la orilla del W á la del E, retrocediendo luego y agitándose de tal manera que un tronco grande que estaba flotando, amarrado con un grueso bejuco, rompió la amarra y fué arrastrado por el agua."

*Hinatúan, Boston, Baganga, Caraga.*—De estos pueblos situados todos en la costa del Pacífico, no tenemos más que las siguientes breves noticias generales enviadas de Caraga por el R. P. B. Llobera, Misionero S. J., las cuales sin embargo bastan para juzgar de la intensidad que allí tuvo el terremoto. Dice pues así: "El 12 hemos tenido un terremoto que no recuerdo haber sentido otro tan fuerte nunca: parece haber sido de circunvalación, puesto que los movimientos de las campanas y de las lámparas de la Iglesia eran circulares. El terremoto fué más fuerte hacia el N de Caraga: en Baganga abrió dos grietas juntos al embarcadero. En Boston derribó la gruesa muralla de cal y canto que formaba la fachada de la Iglesia y tenía más de dos varas de espesor. Dicen que en Hinatúan fué aún más violento, pero no tengo detalles."

*Dávao.*—De la población de Dávao, que se halla en la parte NW del golfo de este nombre, el observador allí estacionado dice que el terremoto fué muy fuerte; paró relojes, hizo tocar las campanas de la Iglesia y produjo espanto general, aunque sin consecuencias, principalmente á causa de su larga duración de un minuto y cinco segundos. Además, del registro trazado por un seismógrafo de pendulo se deduce que los movimientos fueron principalmente en las direcciones NNW–SSE, NNE–SSW, y ENE–WSW. Por otra parte se ha dicho en la Prensa local que en la parte NE del golfo el terremoto fué mucho más violento, causando desperfectos en las casas y abriendo grietas en la tierra. Según esto el terremoto tuvo mayor intensidad en esta región que en Caraga.

*Cagayán.*—Una nota de los PP. Misioneros S. J. de esta población dice: "Temblor de larga duración, si bien no muy fuerte, pues no se cayeron los objetos. La dirección del vaivén de las palmas de coco parecía ser de SSE ó S á NNW ó N. La duración fué tal que hubo tiempo de salir de las habitaciones, bajar la escalera y salir al patio y aún seguía temblando la tierra."

*Nasípit y Cabarbarán.*—El citado observador de Butúan añade en una segunda nota que varias personas de Nasípit y otros pueblos cercanos, de la parte NW del Agusan, le aseguraron que el terremoto fué muy fuerte y largo, pero no causó desperfectos en las casas; aunque sí extraordinario ruido no sólo en éstas sino mucho más en los bosques de los montes vecinos del W. De Cabarbarán, que está al E de la Bahía de Butúan, dicen casi lo mismo, que fué muy fuerte y largo pero sin desperfectos; los árboles oscilaban mucho y las plantas de abacá se mecían tanto, que sus hojas parecían tocar al suelo.

No nos ha sido posible conseguir datos de los pueblos situados en la costa NE de Mindanao, desde Hinatúan hasta Surigao, no obstante de haberlos solicitado. Sin embargo el hecho de no haber oído el observador de Surigao, capital de la provincia, rumor alguno de que hubiese ocurrido en ellos algo extraordinario, siendo así que en muchos hay Misioneros Europeos, siempre más atentos á esta clase de fenómenos, nos hace con razón deducir que el temblor tuvo allí mucho menor intensidad que en los del valle del Agusan situados en idénticos paralelos.

Todos los pueblos mencionados se hallan dentro de 150 kilómetros de distancia de la parte central ó media del valle del Agusan: fuera de esta zona tuvo ya el terremoto mucho menor intensidad, pero fué aún extraordinariamente larga su duración. En la siguiente tabla presentamos la dirección, intensidad y duración de los movimientos observados en algunas principales localidades situadas á más de 150 kilómetros: después del nombre de cada localidad ponemos su distancia y posición aproximadas con respecto al centro del valle del Agusan.

| Lugar. | Distancia y posición respecto del Agusan. | | Dirección observada de los movimientos. | Intensidad. | Duración. | |
|---|---|---|---|---|---|---|
| | *Kms.* | | | | *m.* | *s.* |
| Surigao | 175 | N | ESE-WNW, SSW-NNE | V | 1 | 30? |
| Parang (Cotabato, D.) | 200 | WSW | ------ | IV | ---- | ---- |
| Jagna (Bohol) | 230 | WNW | SW-NE | IV | 0 | 37 |
| Maasin (Leyte) | 240 | NNW | SE-NW | IV | 0 | 30 |
| Tagbilaran (Bohol) | 260 | NW | ------ | IV | ---- | ---- |
| Sarangani | 310 | SSW | ------ | IV | ---- | ---- |
| Dumaguete | 312 | WNW | ------ | III | 0 | 20 |
| Cebú | 320 | NW | S-N | III | 0 | 40 |
| Guiuan (Sámar) | 320 | N | E-W | III | 0 | 15 |
| Ormoc (Leyte) | 330 | NNW | S-N, SSE-NNW | III | 0 | 15 |
| Tacloban (Leyte) | 330 | NNW | ENE-WSW | II | 0 | 10 |
| Borongan (Sámar) | 380 | N | ------ | II | 0 | 20 |
| Calbayog | 440 | NNW | ENE-WSW | II | 0 | 7 |
| Legaspi | 570 | ------ | ------ | II | 0 | 8 |

**Líneas isoséismicas.**—De los datos procedentes puede deducirse que la isoséismica VIII–IX encierra toda la parte central del valle del Agusan, la costa oriental de la isla, desde Baganga hasta Lianga al N de Hinatúan y, si son ciertas las noticias de la Prensa antes mencionadas, también la parte NE del Golfo de Dávao, Plancha VII. Respecto de la costa oriental, como no se indica el estado del gran muro derribado en Boston, ni la clase de terreno en que se abrieron grietas en Baganga, no se puede asegurar si realmente el terremoto tuvo allí alguna mayor intensidad; es muy posible que tuviese la misma que en el valle Agusan, la cual por los efectos mencionados consideramos comprendida entre VIII y IX. Por consiguiente el área de mayor intensidad resulta muy irregular puesto que comprende una faja á lo largo del río Agusan, que se prolonga en dirección NNW–SSE desde Butúan hasta las costas NE del Golfo de Dávao; y en segundo término toda la costa y cordillera oriental comprendida entre los paralelos de Baganga y de Lianga, zona mucho más corta que la de dentro del valle. Para explicar esta irregularidad sería preciso admitir alguna dislocación en las dos diferentes fallas mencionadas al principio; en la que corre á lo largo del Agusan y en la otra secundaria y casi perpendicular que se dirige desde el Agusan hacia la gran Fosa del Pacífico.

La razón principal que nos obliga á creer que hubo algún movimiento en dicha línea secundaria es que, según parece, el terremoto del día 12 fué perceptible en las Islas Palaos, Carolinas Occidentales (134.6° Long. E; 7.5° Lat. N) las cuales distan de las costas de Mindanao unos 900 kilómetros. Conforme á una nota recibida de los RR. PP. Misioneros, O. M. Cap., percibiéronse allí hacia las $13^h$ ($12^h$ m. d. ó momentos después, tiempo del meridiano 120° E de Greenwich) oscilaciones séismicas en dirección WNW–ESE y de intensidad III, durante unos 10 segundos. Como apenas dudamos de que el temblor de Palaos corresponde al de Mindanao y Visayas, es preciso decir que entraron en acción las dos líneas de fractura mencionadas. Resta ahora investigar en cual de las dos se inició el movimiento. El observador de Butúan, situado en el límite N del área meizoséismica, asegura que el terremoto comenzó con movimientos débiles durante muchos segundos, de modo que la gente tuvo tiempo suficiente de darse cuenta de ellos y no hacer caso por considerarlos como debidos á un temblor de los que allí son muy frecuentes: á estos movimientos preliminares siguieron los violentos que fueron de una duración extraordinaria de 50 segundos. Semejantes indicaciones hace el de Talacogon. Esto parece indicar que el origen de los movimientos preliminares se hallaba distante de Butúan y aún de Talacogon: pudo por consiguiente originarse el movimiento en la línea del Pacífico y comunicarse luego á la del Agusan. Así se comprendería también la larga duración del terremoto. Para confirmar esto sin embargo nada puede deducirse ni de las horas dadas por los observadores de Mindanao, ni de los seismogramas de Manila. Éstos, como el terremoto fué bien perceptible hasta 340 kilómetros de distancia, hacen aparecer el origen mucho más cercano de lo que en realidad estaba. Tampoco es fácil determinarse por las direcciones de las ondas séismicas, las cuales fueron complejas en todas partes, como de ordinario sucede en todos los terremotos violentos. Así en Butúan el agua del río al principiar los movimientos violentos se precipitó hacia la ribera oriental ó sea hacia el E; las grietas principales se encontraron en dirección NE–SW; hubo vaivenes violentos en las direcciones NE–SW, ESE–WNW, y S–N, registrados por un seismógrafo de péndulo. De Caraga hacen notar que los objetos suspendidos oscilaban formando un círculo. La curva del seismógrafo de péndulo de Dávao presenta oscilaciones máximas en las direcciones NNW–SSE, NNE–SSW, y ENE–WSW, siendo las de esta última dirección las más persistentes. Si realmente existieron movimientos en ambas líneas, como parece, entonces el movimiento de la falla del Pacífico debió originarse ó por menos extenderse á gran distancia de las costas de Mindanao para poder llegar á ser perceptible en Palaos.

Las isoseismales VII y VI comprenden una zona de unos 100 kilómetros de anchura al rededor de la región meizoséismica, encerrando gran parte del N, centro, S y SE de Mindanao.

La última ó sea la de intensidad II, se extiende por el N y NW hasta el extremo SE de Luzón y las Islas de Sámar, Cebú y Negros, y atraviesa á Mindanao por el meridiano 123° E; de manera que tomando como centro la parte media del Agusan, el temblor fué perceptible por el N hasta más de 500 kilómetros de distancia y por el W hasta unos 380 solamente. Por la parte S la última estación es Sarangani, que dista solamente 310 kilómetros y estuvo comprendida dentro de la isoseismal IV. Registraron este terremoto todos los seismógrafos del mundo.

**Repeticiones ó aftershocks.**—Estos fueron muy numerosos toda la tarde y noche del 12 y los días siguientes 13, 14 y 15; después disminuyó mucho su número principalmente hacia el fin de Julio; pero continuaron aún siendo frecuentes durante Agosto y principios de Septiembre sin haber terminado en la fecha en que escribimos (20 de Septiembre). Más el no existir actualmente en la región Agusana y costas orientales de Mindanao más afectadas otra estación meteorológica que la de Butúan, hace que no podamos presentar una lista completa, á lo menos de las más perceptibles repeticiones. Butúan se halla en el límite N del valle á unos 50 kilómetros del centro donde probablemente concurren las dos líneas de fractura y así muchas de las menores repeticiones allí originadas no debieron ser perceptibles á tanta distancia: por consiguiente la lista de Butúan sólo representa algunas de mayor intensidad, cuyas ondas fueron perceptibles á más de 50 kilómetros. Por ejemplo, la tarde del mismo día 12 se contaron 20 aftershocks en Talacogon é innumerables en La Paz, mientras que en Butúan se registraron 8: el día 13, según una nota de La Paz fueron allí muy frecuentes lo mismo que en Talacogon, al paso que en Butúan sólo se anotaron 2, y así sucesivamente. Una nota de Bunauan del 17 dice que por aquellos días eran muy frecuentes los temblores.

Una idea de la frecuencia con que continuaron repetiéndose en la región de Talacogon durante los meses de Julio y Agosto, puede formarse con las dos notas que añade un Misionero de Talacogon á una lista de varios aftershocks. En la primera del 27 de Julio se pregunta si tan frecuentes y casi continuos temblores de poca intensidad serán prenuncio de otro terremoto destructor; en la segunda de fines de Agosto dice que allí todavía se sienten continuos temblores. En el texto inglés damos la lista de Butúan á la cual añadimos por vía de explicación algunos principales de Talacogon, cuya hora é intensidad conocemos, así como otros vagamente anunciados.

# VOLCANIC ERUPTIONS IN THE PHILIPPINES IN RELATION TO EARTHQUAKES AND SUBTERRANEAN NOISES, TO RAINFALL AND ATMOSPHERIC PRESSURE.

## I. INTRODUCTION.

The exorbitant toll of human lives levied by the recent eruption of Taal Volcano is a lesson which must not be forgotten, so much the less in view of the fact that, under similar circumstances, on a likewise recent occasion (July, 1910) not a single life was lost in Japan. We refer to the eruption of Usu-San Volcano, situated in the southwestern part of Yezo Island (140° 50′ long. E; 42° 33′ lat. N.) near Volcano Bay.

This volcano had been dormant since the year 1853. On July 21, 1910, earthquakes began to be felt in its neighborhood, which by July 23 had acquired an alarming frequency and intensity. These caused the inhabitants of the nearest five towns and villages, located around the volcano at distances ranging only between 3.3 and 8.4 kilometers, to begin on the latter date to desert the immediate vicinity of the mountain, even before the police intervened. The latter soon afterward obliged everybody to keep at a minimum distance of 12 kilometers from the volcano, despite the fact that the same showed not the least sign of extraordinary activity.

At 10 p. m. of July 25 began the explosions which, however, did not take place from the principal crater, but along the northern flank of the volcanic cone. There, at a distance of some 500 meters and about 150 meters below the summit, formed a belt of 45 new craterlets, whose activity lasted until the month of October of the same year. This belt lay only approximately 500 meters from the southern shore of Lake Toya, thickly populated in its whole extent. Some of the earthquakes which preceded and accompanied the formation of the new craters were sufficiently severe to destroy a few weak buildings constructed of wood and brick; an impetuous stream of mud, ejected from one of the new vents, flowed as far as the said lake; rocks and ashes fell likewise in abundance. The topography of the southern shore of the lake was changed completely, a new mountain was elevated, and the bottom of the lake underwent profound alterations. Still, this imposing upheaval did not cost a single life, thanks to the precautions which had been taken when the earthquake began to become frequent.[1]

These occurrences in Japan and those which we have recently witnessed in connection with the eruption of Taal Volcano, January 30, 1911, prove conclusively that some eruptions can be foreseen; a conclusion likewise stated by the eminent seismologist, Prof. F. Omori, at the end of his memoir on the Japanese eruption.[2] Hence, we believe that it will be both interesting and instructive if we let pass in rapid review the eruptions of the most noted Philippine volcanos—to wit, Taal (120° 59′ E; 14° 2′ N), Mayon (123° 39′ E; 13° 16′ N), and Camiguin (124° 42′ E; 9° 12′ N)—giving particular attention to those concerning which we possess sufficient data for studying their character and for investigating in how far they could have been foretold by means of the indications given by earthquakes, subterranean noises, and other symptoms which usually precede great volcanic paroxysms and may serve as timely warnings to escape the fury of the eruption. We will also add a few data bearing on the relation of the eruptions to rainfall and atmospheric pressure. The eruptions are mentioned in chronological order, from the most ancient known down to our own days.

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[1] See "Bulletin of the Imperial Earthquake Investigation Committee," Vol. V, No. 1.—Tokyo, June, 1911.

[2] Ibid., page 38.

## II. ERUPTIONS.

**1707, 1716, 1731. Taal Volcano.**—Relative to these ancient eruptions of Taal there are hardly any data extant as to the manner of their beginning and still less any details concerning earthquakes and premonitory rumblings, if such preceded. The eruption of 1707 took place chiefly from the cone called Binintiang Malaqui, while those of 1716 and 1731 arose from the lake itself, to the east of the principal cone, where a series of explosions resulted in the ejection of a sufficient mass of rocks and sand to form a new islet. The first of these was coincident with violent earthquakes and "conmotions of the earth."

**1749. Taal Volcano, August 11.**—According to the narrative of Fr. Buencuchillo, an eyewitness of the eruption, a rather extensive glare was seen over the summit of the volcano at about 11 p. m. of that day, and the eruption began toward 3 a. m. of the following morning with loud detonations. While the eruption was at its height, there occurred strong earthquakes which opened numerous and great fissures; light earthquakes continued also to be felt during several months after the outburst: nevertheless, it would seem that none preceded the eruption. The latter lasted about three weeks, with greater or less intervals.

**1754. Taal Volcano, May 15 to December 1.**—Whether or not this prolonged and formidable eruption, or rather series of eruptions, was preceded by earthquakes, subterranean noises, or other signs, cannot be ascertained, though it is certain that intense shocks and strong rumblings occurred during the frequent explosions. The aforementioned Fr. Buencuchillo who witnessed also this phenomenon and left us a very detailed description of it, says that between 9 and 10 p. m. the volcano began quite unexpectedly to roar, shoot forth formidable flames, etc. But, as the ejecta of this first outburst fell back exclusively upon the island and into the lake surrounding it, the inhabitants of the near-by villages had time to flee, with the result that only 12 victims are mentioned.

**1766. Mayon Volcano, July 20.**—The whole summit of the cone suddenly appeared incandescent, and during six consecutive days a mighty stream of lava was seen descending the eastern slope. The report says nothing of the damage done, nor whether the outburst had been preceded by earthquakes or subterranean rumblings.

**1800. Mayon Volcano, October.**—Of this eruption nothing is known except that the volcano belched forth, *"as it always had been accustomed to do,"* vast quantities of rocks, sand, and ashes, which caused great damages and loss of life in the villages of Budiao and Cagsana, situated on the southern slope of the volcano.

**1808. Taal Volcano, March.**—Nothing is on record concerning this eruption, if we except some general statements as to its occurrence and the damage which it caused on the island and in the neighboring villages, without any particulars being given.

**1814. Mayon Volcano, February 1.**—This, the greatest eruption of the Albay volcano mentioned in Philippine annals, was not preceded by any premonitory signs, save some earthquakes during the preceding day. "During the 31st of January," wrote the Franciscan, Fr. Aragoneses, parish priest of Guinobatan, "We felt some slight earthquakes, but paid little attention to them as they had been very frequent in this region ever since the terrible earthquake of October, 1811. During the night the quakes increased, and at 2 in the morning (February 1) we felt one of greater force than any previously experienced. It was repeated at 4 a. m., and from this time on the shocks were practically continuous until the eruption began."

"Tuesday dawned, and rarely ever had I seen in the Camarines a more lovely and peaceful morning or clearer sky. I noticed, however, that the hills nearest to the volcano were covered by a haze which I believed to be the smoke of some house burned during the night. Eight o'clock of that fatal morning sounded, and at that moment the volcano began suddenly to belch forth a mighty column of rocks, sand, and ashes which in an instant reached the highest heights ( ?). of the atmosphere. The sight was overwhelming and filled our hearts with extreme terror, especially when we became aware that the side of the mountain was being rapidly covered. Never had we seen an eruption like this! At once we became convinced that a vast torrent of fire was coming upon us to consume us; hence we took to precipitous flight." Cagsaua, where the author of the last preceding lines was staying at the time, is situated some 10 kilometers south-southeast of the volcano. Owing to the northeast wind prevailing at the time, the ejecta fell chiefly on the southern and southwestern slopes, destroying the nearest three hamlets completely and two others partly, the zone of destruction extending to a distance of more than 15 kilometers from the crater. All vegetation was ruined and over 1,200 persons were killed within the short space of barely five hours during which the fury of the mountain was at its height. The mass of solid ejecta, rocks, sand, and ashes or dust, was so enormous that even in places at a distance of 10 kilometers the layer was still about 0.40 meter deep. The detonations accompanying this outburst were heard in the remotest points of the Archipelago, and the volcanic dust was carried by the atmospheric currents as far as Manila and even more distant provinces.

According to the testimony of the aforementioned parish priest of Guinobatan, this terrific and disastrous eruption was preceded by frequent but feeble shocks which commenced 24 hours before the catastrophe, and by very frequent and violent earthquakes during the last 10 or 12 hours before it. The author says nothing of subterranean noises before the eruption, nor does he mention any earthquake after its beginning.

**1853. Mayon Volcano, July 13.**—It is said that this eruption was preceded by loud subterranean noises, but not by earthquakes. At about noon of the 13th an immense column of smoke and ashes was seen to rise from the volcano, while at the same time incandescent boulders came rolling down the slopes of the cone, destroying many dwellings in the adjoining fields and causing the death of 33 persons, while many more were injured. The eruption lasted only a few hours; nevertheless the immediate vicinity of the mountain was covered by a layer of ashes of considerable depth. It cannot be ascertained whether the subterranean rumblings were heard days, or only hours in advance of the outbreak and, consequently, how much time people had to flee.

Eruptions on a small scale are mentioned as having occurred in the years 1827, 1828, 1835, 1845, 1846, 1851, 1855, 1858, and 1868.

**1871. Camiguin Volcano, April 30.**—This volcano, situated on the small island of the same name, which lies close to the northern coast of Mindanao, had been dormant since time immemorial. There were, however, some vague rumors that on the top of the evidently volcanic northernmost mountain of the island there existed a circular lake from whose waters great masses of vapors had been seen rising on various occasions.

The year 1871 brought a change. From the middle of February. until the day of the eruption the small island, but above all its northern extremity, was daily shaken by earthquakes of varying intensity. Of these four or five were of destructive violence and were felt throughout the extensive region of Mindanao and the Visayas.

Thanks to the industry to the then "gobernadorcillo" (president) of Catarman, a town situated barely a mile from the spot where the volcano burst, and to a great extent destroyed by the eruption, we are in possession of an almost complete catalogue of the series of shocks which preceded the outburst. We present herewith a résumé of his list, which shows that from February 16 until April 29 not a single day passed without there being felt some earthquakes, which were usually accompanied by subterranean rumblings proceeding from the interior of the near-by mountain. This latter circumstance, coupled with the extensive landslides and fissures caused on the slopes of the mountain, soon suggested to the people the idea that a volcanic eruption was imminent.

| Date. | Earthquakes. | Remarks. |
|---|---|---|
| February 16 | Two slight earthquakes | |
| February 17 | Frequent shocks during day and night | |
| February 18 | do | One of intensity VIII. |
| February 19 | do | One of intensity VII. |
| February 20 | do | |
| February 21 | do | One of intensity IX. |
| February 22 | do | One of intensity VIII. |
| February 23 to 28 | do | |
| March 1 to 3 | do | |
| March 4 | do | One of intensity VI. |
| March 5 to 7 | Less frequent, not more than 10 per day | |
| March 8 | do | Two of intensity VI. |
| March 9 | do | |
| March 10 | do | Do. |
| March 11 to 13 | do | |
| March 14 to 17 | Less frequent, 4 or 5 per day | |
| March 18 to 19 | More frequent and violent than during preceding days | |
| March 20 to 31 | Less frequent, not exceeding 6 per day | |
| April 1 to 29 | Frequent during the entire month; number never less than 6–10 per day. | |
| April 30 | At 7 a. m., with a terrific detonation and a cloud of vapor, rocks, and ashes, a volcano burst on the north-northeastern end of the island, only a few meters from the shore. After this explosion, semifluid lava continued to rise peacefully during about three years, building-up a cone approximately 400 meters high. The ashes of the first explosion were carried to distances of 200 miles. Within a radius of 2 to 3 kilometers from the new crater destruction was complete. The earthquakes ceased almost completely a few days after the eruption. There was no loss of life as the people of Catarman, the town nearest to the volcano, and the only one destroyed by it, had deserted their homes long before, some having left for other islands as early as the end of February. | |

**1871. Mayon Volcano, December 8.**—At daybreak some subterranean noises were heard and after three very strong rumblings between 7 and 8 a. m., a mighty column of smoke was seen rising from the top of the mountain. Soon ashes, sand, and lava were noticed to issue from the crater, but the force ejecting them was not powerful. Nevertheless, the clouds of smoke and ashes, impelled by the northeast wind, covered the entire southern and southwestern slopes of the volcano, causing considerable darkness up to a distance of 20 kilometers. By 10 a. m. the sky became clear again, but at 1 p. m. occurred the principal explosion accompanied by strong detonations and vivid lightnings. A great quantity of ashes fell as far as 30 kilometers from the crater and the lava streams reached the nearest villages situated on the south and southeast sides of the mountain. Only two persons are known to have perished, the one asphyxiated, the other burned, both at a distance of about 10 kilometers southeast of the volcano. All the other inhabitants of this so-often-chastised region had evidently fled when the first symptoms of the impending eruption became manifest, which was about 8 to 10 hours before the outburst. No mention is made of earthquakes.

**1872. Mayon Volcano, September.**—Small flows of lava, accompanied by subterranean noises and weak explosions.

**1873. Mayon Volcano, June 15 to July 22.**—Small flows of lava, accompanied by subterranean noises and weak explosions, the principal ones occurring during the night of June 20 to 21.

**1874. Taal Volcano, July 19.**—Explosion of gases and ashes which covered the whole island, destroying the vegetation and killing a considerable number of the cattle which was being raised on it.

**1878. Taal Volcano, November 1 to 15.**—During many days noises were frequently heard within the volcano; finally, from November 12 to 15 there occurred small explosions which left the whole island covered by ashes.

**1881 and 1882. Mayon Volcano, July 6, 1881 to January, 1882.**—This long eruptive period was characterized by a quiet flow of lava from the various openings and fissures on the southern and south-southeastern sides which form the gulches and ravines of the upper reaches of the cone. The lava issued from them in an almost solid state, in broken and loose masses, but always incandescent; there were irregular increases and decreases of activity; and during some nights very deep subterranean rumblings were heard which usually were the forerunners of a more abundant flow of lava.[1] No damage was done on the occasion of this eruption, the principal explosions of which took place on November 21st and December 14th.

**1885. Mayon Volcano, November 23, 24, and December 2.**—Lava flows accompanied by subterranean noises, which latter began already on the 21st. The streams of lava did not reach any of the inhabited or cultivated parts of the mountain.

**1887. Mayon Volcano, February 22 to March 10.**—The climax of this eruption which, with longer or shorter intervals of calm, lasted some 20 days, had been heralded ever since the eruptive period of less importance of the preceding year. In fact, since July 8, 1886, the volcano had frequently ejected small amounts of lava and ashes. The four principal explosions of the eruption of 1887 occurred on February 22 and 27 and on March 1 and 9. The volcano ejected vast quantities of lava and immense clouds which latter extended themselves to a distance of more than 20 kilometers around the volcanic cone. It would seem that only during the paroxysm of March 1 subterranean noises were heard, while no mention whatever is made of earthquakes. Already on February 22 the inhabitants of the villages on the southern flank of the mountain, whither the streams of lava threatened to take their course, had sought refuge in more secure places.

**1888. Mayon Volcano, December 15; 1890, September 30, and October 1; 1891, October 3 to 18.**—Three unimportant eruptions, each of which was accompanied by subterranean noises, but not by earthquakes. The most serious of them was that of 1890, when the lava streams reached the fields of the nearest villages on the east side without, however, doing very great harm. Indications of this eruption were noticeable as early as September 10, but it did not acquire its greatest intensity until the 30th of the month.

**1892. Mayon Volcano, February 21 to 29.**—On the 3d of February a glow or incandescence began to be noticed on the volcano and on the 9th it was discovered that a flow of lava had taken place. But the real eruption began only on the 21st, when the mountain hurled volcanic bombs to great distances and emitted a great quantity of ashes together with quite an amount of fluid lava. Thus it continued, with various intervals of calm, until the 29th. The ejecta fell mainly in the neighborhood of the crater, hence neither loss of life nor material damage resulted. The people living in the nearest villages on the eastern slopes of the immense volcanic cone had, however, taken the precaution of deserting the dangerous neighborhood. A strange circumstance of this eruption was that no subterranean noises were heard until the 24th, when the outburst reached its greatest intensity. Nothing is said of earthquakes.

**1893. Mayon Volcano, October 2 to 22.**—The impending eruption announced itself on

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[1] See "El Mayon ó volcán de Albay," by D. Enrique Abella y Casariego, Madrid, 1885.

October 2 and 3 by subterranean rumblings which, however, could be heard only in the villages closest to the volcano. At nightfall of the 4th a vivid glare coming from the crater was first noticed. The following day explosions were heard, an immense column of smoke and ashes began to issue and lava commenced to flow without, however, reaching as yet a great distance from the crater.

At 6 p. m. the volcano entered into full activity with intense rumblings, tremendous column of smoke and ashes, volcanic bombs, and torrents of lava streaming down the eastern and western sides. On the 8th the fury of the outburst began to relax somewhat, though the eruption lasted until the 22d. The ashes were carried to distances of 30 and 40 kilometers. The lava streams ruined many fields on the eastern side of the volcano and killed quite a number of animals found there, but no loss of human lives was to be lamented, as the people had evacuated the nearest villages during the four days which preceded the violent eruption. Two earthquakes were felt: one on the 11th, the other on the 18th while the extraordinary activity of the volcano was still continuing.

**1895 and 1896. Mayon Volcano, July and September, respectively.**—These were rather preliminaries of eruptions or perhaps abortive eruptions, accompanied by subterranean noises, but not by earthquakes. The volcano ejected some lava and glowing rocks, neither of which reached any great distance from the crater. The first eruption occurred on July 20, 1895, and lasted only one hour, the second lasted from August 31 to September 26, 1896.

**1897. Mayon Volcano, June 25 and 26.**—This eruption of flowing lava, rocks, and ashes claimed some 350 victims in five hamlets situated about 6 kilometers from the crater on the eastern slopes of the mountain. It is asserted that as early as the 22d there was observed something unusual about the activity of the volcano. At nightfall of the 23d it could be seen distinctly that glowing rocks were being ejected and that a flow of lava had taken place, accompanied by subterranean noises. At daybreak of the 24th the rumblings increased some being so intense as to cause the ground to tremble; but no real earthquake was felt. By 10 a. m. the phenomenon began to be imposing; vast clouds of vapors and ashes covered the entire neighborhood of the volcano, especially toward east, whither they were driven by the prevailing wind. The flow of lava was likewise more abundant on the eastern side, as was indicated by the fumaroles which seemed to precipitate themselves down the sides of the mountain. Thus matters went on during that whole day and the following night, June 24 to 25. At 6 a. m. of the 25th began the great eruption. Lava flowed in mighty streams down the eastern side as far as the sea, some 20 kilometers distant, sweeping before it everything which it encountered; immense clouds of vapor and ashes shrouded the entire region as if to hide the catastrophe in darkness; while all the while terrific roars reverberated which could be heard at places more than 250 kilometers from the volcano. This paroxysm lasted until the morning of the 26th, some 24 hours! The ashes were carried to a distance of 160 kilometers toward west and northwest, and much farther toward east.

The eruption was neither preceded nor accompanied by true earthquakes. There were, however during the space of 50 hours some doubtful warnings of an impending outburst, and an extraordinary increase of activity with increasing subterranean rumblings during the last 27 hours preceding the disaster. Hence, the mountain gave ample time to the people of the villages closest to the crater to avoid falling victims to the final catastrophe, but not all heeded the warnings.

**1903. Taal Volcano, April.**[1]—An unimportant eruption of explosive character, which probably continued until 1904. A small outlet opened within the principal crater which

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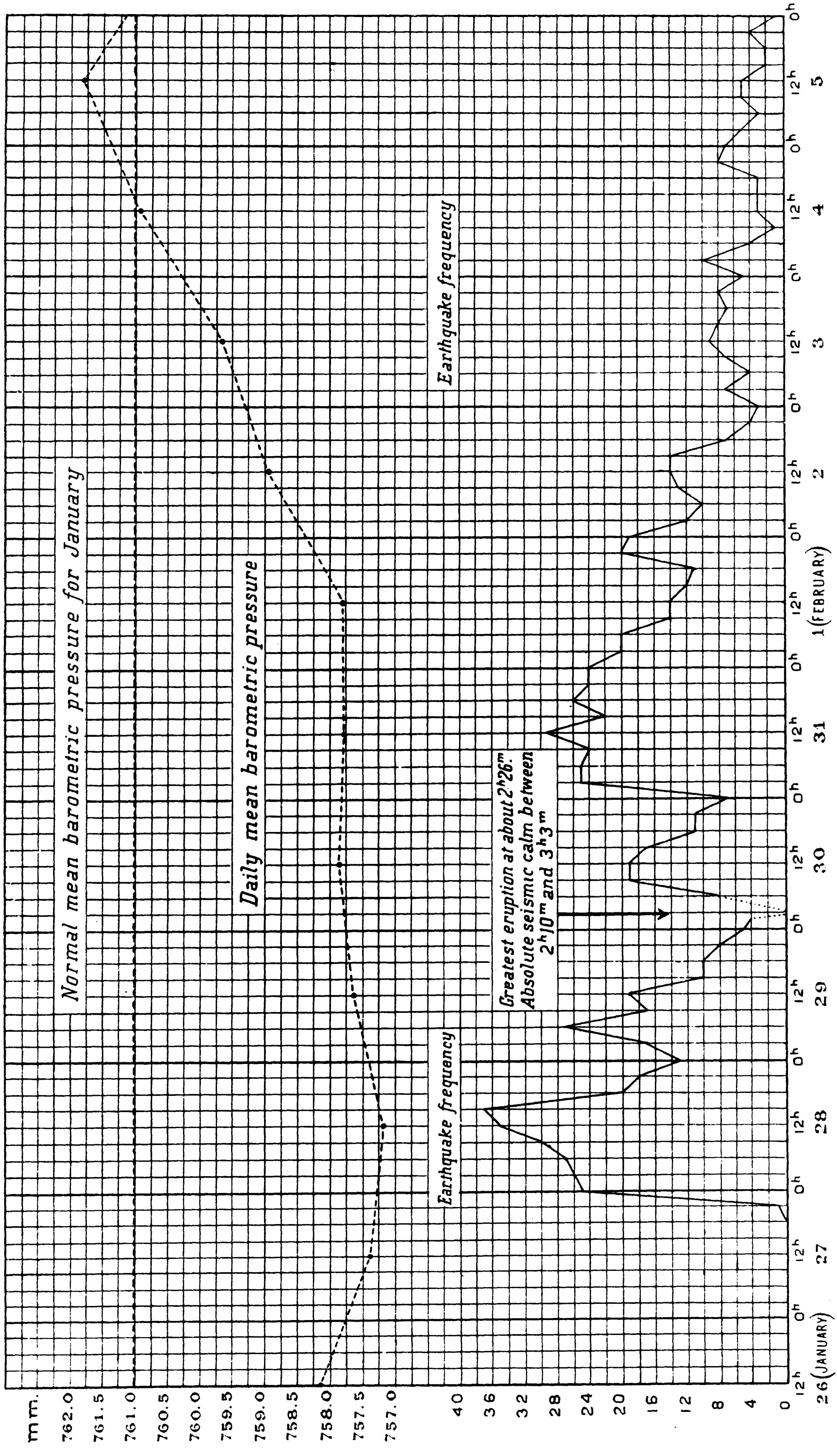
[1] See "Monthly Bulletin," Philippine Weather Bureau, April, 1903.

Plate VIII.



Variation of Barometric Pressure and Earthquake Frequency during Eruption of Taal Volcano, January 30, 1911.

(Three-hour intervals.)

at intervals ejected mud and rocks to short distances. There is no doubt that the principal explosions took place during the first half of April, 1903, the fact notwithstanding that some publications assign them to April, 1904.[1]

**1911. Taal Volcano, January 30.**—The premonitory earthquakes began during the night of the 27th and continued, with increasing frequency and intensity, during the 28th and 29th; at the same time the volcano began to show extraordinary activity, ejecting mud and ashes during the 52 hours which elapsed between the first earthquakes and the great explosion, which latter occurred shortly after 2 a. m. of the 30th. Hence we find that this death-dealing outburst was for no less than 52 hours preceded by earthquakes, subterranean rumblings, and an increased volcanic activity; all of which was alarming enough. One should imagine that such state of affairs would have sufficed to induce every rational being to leave the neighborhood of the volcano at all cost; had it been so, possibly everyone of the 1,300 victims would have been saved! The earthquakes continued during many days after the great eruption, although already on February 1 the eruptive activity had subsided to such degree that the volcano appeared to have returned to its normal state.[2]

The Plate VIII accompanying this paper shows the frequency curve of earthquakes from January 27 to February 5, together with the atmospheric pressure during this terrible outburst of Taal Volcano. The former has been traced from the records of the following instruments: Vicentini universal seismograph, horizontal pendulums (system Omori), and Wiechert seismograph, which are mounted at Manila Observatory, 63 kilometers from the volcano. Hence, the curve comprises not only the earthquakes which were perceptible at this distance and reached degree IV, but likewise the so-called purely instrumental disturbances; that is, such as, *in Manila,* did not exceed intensity I of the scale.

## III. DISCUSSION.

In the preceding paragraphs we have reviewed 21 more important eruptions, 13 of Mayon, 7 of Taal, and 1 of Camiguin. Of these only two caused the loss of a considerable number of lives—the one of Mayon in 1814, with 1,200 killed and an immense number of injured; and the most recent of Taal, in 1911, in which 1,300 perished.

At first sight the eruptions of Taal and Mayon present different characteristics: The former have without exception been of an explosive nature, without flow of lava; while the latter may be called *mixed,* as they usually consisted of initial explosions which appeared to open a path for the lava, which then issued without further violence. The eruptions of Taal have nearly always been accompanied not only by loud detonations and subterranean rumblings, but also by strong earthquakes which continued even after the eruption; those of Mayon, on the contrary, are not characterized by such commotions. Both agree, however, in one particular which is very much to our purpose: In neither volcano have the paroxysms or the maximum violence of their eruptions ever come on so suddenly that they were not, at least for some hours, preceded by ominous signs or mild eruptions. This remark applies even to the outburst of Taal in 1749. Fore, although, according to the parish priest of Sala, the disaster came as a surprise, there was nevertheless sufficient time to flee, especially as the volcano exhibited a certain glow some 4 hours before the catastrophe. Only one eruption of Mayon has been heralded by earthquakes, if we take the words in their proper meaning, that is that they actually preceded the first unusual manifestations of volcanic activity. More frequently have they been announced by subterranean rumblings which on some occasions were simultaneous with an increased emission of vapors, while on others there was no indication of unwonted activity on the part of the volcano.

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[1] "Geological Reconnaissance of Southwestern Luzon." By George J. Adams; the Philippine Journal of Science, Vol. V, No. 2, March, 1910. "The Eruption of Taal Volcano, January 30, 1911." By Rev. Miguel Saderra Masó, S. J., Manila, 1911.

[2] For further details concerning the eruptions of Mayon and Taal volcanoes the reader is referred to the following publications: "La Erupción del Volcán Mayon, 1877." By Rev. José Coronas, S. J., Manila, 1898; and "The Eruption of Taal Volcano, January 30, 1911." By Rev. Miguel Saderra Masó, S. J., Manila, 1911.

The one eruption of 1814 which was preceded by earthquakes, was chiefly of explosive character and took place after a period of many years during which the volcano had been dormant to such extent that even the wisp of vapors which at other times always crowns its summit, had disappeared. It would seem that the ancient vents had become obstructed with the result that the new eruption opened a passage with a violence which rent asunder the upper part of the cone and blew it to pieces. The author of the description mentioned in the earlier part of this paper says: "According to my estimate the walls of the crater of the volcano had been lowered some 20 *varas* (16.8 meters) and on the south side there was laid bare a wide and horrid chasm whose very sight was awe-inspiring. Three new vents had been opened at a considerable distance from the principal crater and continued for a long time to emit smoke and ashes." It seems plausible that the immense amount of rocks, sand, and dust which after this eruption covered the region of the volcano was largely due to the part of the cone blown to pieces by the explosions. None of the several descriptions extant mentions any flow of lava on this occasion.

The eruption of Camiguin Volcano showed special features proper to apparently extinct volcanos, in which the old outlets must have been blocked to great depths by solidified lava. Hence the prolonged and immense efforts which the lava and gases needed in order to open a new passage and which manifested themselves by two months and a half of continual earthquakes. Finally the rupture occurred, not precisely through the old crater, but at the base of the volcano, no doubt because this part offered less resistance. Something analogous happened on the Usu-San in 1910. The slight earthquakes which continued to be felt on Camiguin Island during the first days after the explosion, were probably for the most part due to the vibrations set-up by the violent escape of lava and gases.

The facts thus far adduced would seem to warrant the following conclusions:

(1) In the Philippine Islands only the eruptions of apparently extinct, or at least for a long time dormant volcanoes have been preceded by earthquakes; the great explosive eruptions have, however, been accompanied by them, but not the eruptions of lava.

(2) The intensity of the eruption has usually been in inverse proportion to its duration, if we except the long eruptive period of Taal in 1754.

(3) The earthquakes which have nearly always accompanied and followed the great eruptions of Taal cannot be ascribed to vibrations caused by the violent escape of the ejecta, but are due to geological movements in the fault-line on which the volcano is situated. This seems to follow from both, the persistence of the tremors even after the volcano has returned to its normal state, and the differences in the meizoseismic area which have been observed, the said area being some times elongated toward north-northeast, as in 1749, and at others toward south-southwest of the volcano, as in 1911. On the contrary, the weak earthquakes which occasionally have been felt during eruptions of Mayon Volcano, may well be attributed to superficial tremors of the volcanic cone itself.

(4) Both, the explosive eruptions of Taal and those of lava of Mayon, have invariably increased from a mild beginning indicated now by earthquakes, now by subterranean noises, or by both phenomena, to a maximum intensity which followed generally after a few days, and only on rare occasions already a few hours later, the shortest interval

having been one of 4 hours. It is, therefore, not too bold to state that on all occasions the volcanoes gave sufficient time to the inhabitants of the immediate and, therefore, most endangered neighborhood, to withdraw to safer places.

## IV. RAINFALL.

The eruptions of Mayon Volcano whose dates are known may be said to be 22, and they were divided among the months of the year as follows: January 1, February 3, March 1, April and May 0, June 2, July 4, August 0, September 3, October 3, November 2, December 3. Of the 8 eruptions of Taal, the month of whose occurrence is known, each took place during a different month, there remaining without one February, June, October, and December, at least if we do not take into account the many minor explosions which during the prolonged eruptive period, May to December, 1854, took place during three of these months. Hence, whether we consider the number or the intensity of the eruptions of Taal, we find hardly any difference between those which occurred in the dry season, January to May, and those of the rainy season, June to December. The eruption of Camiguin Volcano began on the last day of April. Consequently, there remain only the 22 eruptions of Mayon for a comparison with the distribution of rainfall. In the region of this volcano there are no dry and wet seasons like in other parts of the Archipelago. The monthly means of rainfall deduced from 14 years of observations which were made partly at Albay, partly at Legaspi (barely 2 kilometers from the former town) show that there are 5 months, March, April, May, June, and August, with an average amount of precipitation ranging between 147 and 220 millimeters, while the remaining 7 months have monthly means between 250 and 484 millimeters. If we ascertain the number of eruptions which correspond to each group of months, we find that 3 occurred during the former, but 19 during the latter; a result which would hardly be affected if we took into account the outbursts of Taal and the one of Camiguin Volcano: we would still have three times as many during the period of more abundant rainfall.

## V. ATMOSPHERIC PRESSURE.

We have compared the mean atmospheric pressure of each eruptive period with the corresponding monthly mean and the normal mean for the month. As no earlier barometric observations exist, this investigation can cover only the eruptions which took place since 1890, which are 7 of Mayon and one of Taal, as we have to omit the eruption of the latter volcano in 1903, owing to the uncertainty of its duration. While there is no doubt that it began in April, 1903, it is not certain whether or not there was a recrudescence during the same month of 1904. We beg, however, to remark that during the first half of April, 1903, the atmospheric pressure was 0.91 millimeters in excess of the normal, while during the first half of the same month, 1904, it was exactly the same amount below.

The following table contains the various data bearing on this investigation. The first column contains the name of the volcano, the month, year, and eruptive period. The second gives the different mean values of atmospheric pressure in three subdivisions. Of these the first marked, "a," shows the normal mean pressure for the month during which the eruption occurred: in the case of Mayon Volcano, this value is derived from 12 years of observations, but from those of 26 years as regards Taal: for the former having been used the observations made at Albay, for the latter those made at Manila. The second subdivision, marked "b," gives the actual mean pressure of the month of eruption; while the third, marked "c," contains the mean pressure for the days during which each eruption was in progress. Finally, the third principal column exhibits the differences between the various values of column two.

| Eruptions and eruptive periods. | Mean atmospheric pressure. | | | Differences. | | |
|---|---|---|---|---|---|---|
| | Normal.<br>a | Monthly.<br>b | Eruptive period.<br>c | a-b | b-c | a-c |
| Mayon, September, 1890 (Sept. 10 to Oct. 4) | 757.5 | 755.0 | 754.8 | —2.5 | —0.2 | —2.7 |
| Mayon, October, 1891 (1 to 20) | 758.4 | 758.4 | 758.7 | 0.0 | +0.3 | +0.3 |
| Mayon, February, 1892 (21 to 29) | 761.7 | 760.2 | 759.0 | —1.5 | —1.2 | —2.7 |
| Mayon, October, 1893 (2 to 11) | 758.4 | 758.0 | 756.4 | —0.4 | —1.6 | —2.0 |
| Mayon, July, 1895 (20) | 757.9 | 757.8 | 754.7 | —0.1 | —3.1 | —3.2 |
| Mayon, September, 1896 (Aug. 30 to Sept. 8.) | 757.5 | 758.0 | 757.3 | +0.5 | —0.7 | +0.2 |
| Mayon, June, 1897 (21 to 30) | 757.7 | 757.2 | 756.6 | —0.5 | —0.6 | —1.1 |
| Taal, January, 1911 (Jan. 26 to February 5) | 761.0 | 759.8 | 758.3 | —1.2 | —1.5 | —2.7 |

The values shown in this table are certainly very interesting, though not conclusive, owing to the small number of cases. Not only the mean pressure for the actual period of eruption, but even the monthly mean is found to have been below the normal of the month in all except two instances. Moreover, if we assign to the various eruptions values expressing their relative intensities, it is at once evident that these and the deficiency of atmospheric pressure are in direct proportion.

The most notable eruption in this regard is the most recent, in 1911. During 31 years, that is during the period 1880 to 1911, the mean atmospheric pressure for January had been only once, in 1890, as low as in 1911; while the period of 6 days, from January 26 to 31, 1911, during which the mean pressure remained constantly between 757.2 and 758.2 millimeters, has no parallel in the records of the Observatory since 1880. Only in January of the latter year there were three days, the 6th, 7th, and 8th, whose daily average pressures were between 757.4 and 757.8 millimeters.

## VI. INUNDATIONS CONNECTED WITH MAYON AND BANAHAO VOLCANOES.

Before concluding the present discussion we must say a few words on a meteorological phenomenon which is connected with some volcanoes and has formerly been attributed, in the Philippines as well as elsewhere, to real eruptions; to wit the torrents of mud, stones, and sand which during seasons of extraordinarily heavy rainfall are occasionally formed on the slopes of volcanic cones, and after the manner of avalanches overwhelm the vicinity, carrying with them death and destruction.

The earliest instance recorded in the history of Mayon Volcano occurred on October 23, 1766, having been caused by the excessively abundant rains accompanying a typhoon which passed close to the north of Albay Province. The number of victims is not stated, but must have been great, if we may judge from the havoc wrought in the villages and fields lying south of the volcano. On October 31, 1775, another typhoon brought a similar disaster to the neighborhood of the volcano, in which 1,500 persons perished.

Two occurrences of the same character are likewise recorded of the extinct volcano of Tayabas, called Banahao (121° 27′ long. E; 14° 2′ lat. N). The first of these happened in 1743.[1] The most probable explanation is, that the southern rim of the ancient crater gave way under the pressure of the water which filled the crater and now precipitated itself in the form of an avalanche of mud and stones upon Saryaya and its surroundings, ruining everything and killing a large number of people.

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[1] Some authors place this event in the year 1730. In "Estado Geográfico, etc., de la Apostólica Provincia de S. Gregorio Magno" (Binondo [Manila], 1865) the author, Fr. Felix de Huerta, tells us on page 231, that the town of Saryaya was transferred to another site "in 1743, as the great lake had burst, into which the mentioned volcano (Banahao) had changed on the occasion of its last eruption in 1730." The same he repeats on page 232. Speaking of the church of Saryaya "which had been destroyed completely by the earthquakes of 1743," he continues: "During the same year the great lake of Banahao broke through and its waters swept away nearly the entire town," etc. May it not be, that the occurrence of 1730 which the author calls the last eruption of Banahao, was in reality a disaster similar to the one of 1743, and not a true eruption? At least we have been unable to find such eruption mentioned in any description prior to the publication of the "Estado Geográfico," etc.

Quite recently, in January, 1909, the phenomenon was repeated, though on a much smaller scale. On this occasion the cause seems to have been great slides which during the rainy months of 1908 had taken place on the borders of one of the principal ravines, which on the south side of the volcano run from the summit to the sea. As this material had completely blocked the gulch, a lake formed above it; but seepage gradually undermined the improvised dam which finally yielded with the result that an avalanche of mud and rocks swept down the mountainside and destroyed a part of the fields cultivated by the people of Saryaya.

Both occurrences, that of 1743 and that of 1909, have been announced as eruptions of Banahao; but this is an error. The same is to be said of the two similar happenings in connection with Mayon which we have mentioned and which likewise in some histories figure among the eruptions of the said volcano.

# ERUPCIONES VOLCÁNICAS DE FILIPINAS EN RELACIÓN CON LOS TEMBLORES DE TIERRA Y RUIDOS SUBTERRÁNEOS, LA LLUVIA Y LA PRESIÓN ATMOSFÉRICA.

## I. INTRODUCCIÓN.

El exorbitante número de vidas sacrificadas por la última erupción del volcán Taal es una lección que no debe olvidarse; mucho más al ver que en el Japón, en fecha muy reciente, Julio de 1910, en circunstancias semejantes no se perdió ni una sola vida. Nos referimos á la erupción que tuvo lugar en el volcán Usu-San, situado en la parte SW de la isla Yezo (140° 50′ Long. E.; 42° 33′ Lat. N.), cerca de la Bahía Volcán.

Este volcán había estado durmiente desde el año 1853. El 21 de Julio de 1910 comenzaron á sentirse temblores de tierra en sus cercanías, los cuales el 23 adquirieron frecuencia é intensidad alarmantes. En vista de esto los habitantes de los cinco pueblos más próximos, situados á distancias comprendidas entre 3.3 y 8.4 kilómetros al rededor del volcán, comenzaron ya á alejarse de él desde esta fecha, aún antes que interviniese la policía; la cual obligó luego á todos á mantenerse á una distancia de 12 kilómetros del volcán, por más que en éste no se viera ni el más mínimo indicio de actividad extraordinaria.

Por fin llegó el día 25 y á 10 p. m. principiaron las explosiones, pero no precisamente en el cráter principal sino al rededor del flanco N del cono volcánico, á unos 500 metros de distancia y á 150 metros debajo de la cúspide, donde se formó una línea de 45 nuevos pequeños cráteres cuya actividad duró hasta el mes de Octubre siguiente. Dicha línea de cráteres se hallaba á poco más de 500 metros de la orilla S del lago de Toya, toda ella densamente poblada. Algunos de los terremotos que precedieron y acompañaron la formación de los nuevos cráteres fueron tan fuertes que destruyeron varios edificios de madera y ladrillo: una impetuosa corriente de lodo arrojado principalmente por uno de ellos corrió hasta el expresado lago; llovieron piedras y ceniza en abundancia. La topografía de la ribera sud del lago quedó completamente transformada, surgiendo una nueva montaña y sufriendo grandes cambios el fondo del mismo lago. Tan imponente fenómeno no costó sin embargo una sola vida, gracias á las precauciones tomadas al notar que se repetían los temblores.[1]

Este hecho de Japón y el reciente del Taal nos prueban manifiestamente que muchas erupciones pueden preverse, y esta es la conclusión que saca el insigne seismólogo, Prof. F. Omori, al fin de su memoria sobre la erupción japonesa.[2] Creemos pues que no carecerá de interés y utilidad el revisar brevemente las erupciones de los volcanes filipinos de Taal (120° 59′ Long. E; 14° 2′ Lat. N), Mayon (123° 39′ Long. E; 13° 16′ Lat. N), y Camiguín (124° 42′ Long. E; 9° 12′ Lat. N) fijándonos principalmente en aquellas de que poseemos datos suficientes, á fin de estudiar su carácter y descubrir hasta que punto pudieron predecirse, mediante los temblores, ruidos subterráneos, y otros indicios, que suelen preceder á los grandes paroxismos volcánicos, y así ponerse á salvo de sus estragos. También presentaremos algunos datos sobre su relación con las lluvias y la presión atmosférica. Comenzaremos por las más antiguas, remontándonos por orden de fechas hasta nuestros días.

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[1] Véase "Bulletin of the Imperial Earthquake Investigation Committee," Vol. V, No. 1.—Tokyo, June, 1911.

[2] Ibid., pag. 38.

## II. ERUPCIONES.

**1707, 1716, 1731. Volcán Taal.**—De estas erupciones más antiguas apenas existen datos acerca de la manera como principiaron, y mucho menos pormenores algunos de los temblores y ruidos precursores, si los hubo. La de 1707 se verificó principalmente en el cono llamado Binintiang Malaqui, y las de 1716 y 1731 en el lago mismo al E del cono principal, donde una serie de explosiones arrojó tantas piedras y arena que se formó un islote. Con la primera coincidieron grandes terremotos ó *"conmociones de la tierra."*

**1749. Volcán Taal, 11 de Agosto.**—Según refiere el P. Buencuchillo, testigo ocular de esta erupción, vió, como á las once de la noche, antes de acostarse, un resplandor ó luz algo abultada en la cumbre del volcán: la erupción comenzó hacia las 3 de la madrugada siguiente, con fuertes detonaciones. Durante lo más fuerte de la erupción hubo terremotos muy intensos que abrieron muchas y grandes grietas; después continuaron sintiéndose temblores de poca intensidad durante varios meses. No parece sin embargo que hubiese ninguno precursor. Esta erupción duró unas tres semanas con intermitencias más ó menos largas.

**1754. Volcán Taal, del 15 de Mayo al 1 de Diciembre.**—Á esta formidable y larguísima erupción ó mejor dicho, serie de erupciones, no consta precediesen temblores de tierra, ruidos subterráneos ú otros indicios, aunque los hubo muy intensos junto con las muchas explosiones. El citado P. Buencuchillo, testigo de vista y autor de una minuciosa relación, dice que el volcán comenzó entre 9 y 10 de la noche á bramar de improviso y á despedir formidables llamas, etc. Sin embargo como los productos de las primeras explosiones cayeron solamente sobre la isla y el lago que la circunda la gente de los pueblos vecinos tuvo tiempo de alejarse; por manera que tan solo se citan 12 víctimas.

**1766. Volcán Mayon, 20 de Julio.**—Apareció la cúspide del cono completamente incandescente, viéndose descender hacia el Este una gran corriente de lava durante 6 días consecutivos. No se mencionan los daños causados; ni tampoco se dice nada de temblores de tierra, ni de ruidos precedentes á la erupción.

**1800. Volcán Mayon, Octubre.**—Apenas se sabe otra cosa de esta erupción, sino que el volcán arrojó, *"como siempre había acostumbrado"*, gran cantidad de piedras, arenas, y cenizas, las cuales causaron muchos daños y muertes en los pueblos de Budiao y Cagsaua, que se hallaban sentados en la vertiente S del volcán.

**1808. Volcán de Taal, Marzo.**—De esta erupción no quedan más noticias que las generales de su existencia, y de los daños que causó en la isla y en los pueblos vecinos, sin pormenores algunos.

**1814. Volcán Mayon, 1 de Febrero.**—Es esta la más grande erupción del volcán de Albay, de que hay memoria en los anales de Filipinas. No la precedieron más señales precursoras que varios temblores de tierra durante el día precedente. "El 31 de Enero," escribe el Franciscano, P. F. Aragoneses, Párroco de Guinobatan, "sentimos algunos pequeños temblores, pero apenas hicimos caso de ellos, respecto de haber sido éstos allí muy frecuentes desde el horroroso terremoto de Octubre de 1811. Por la noche aumentaron los temblores; á las 2 de la mañana (1 de Febrero) sentimos uno más fuerte que los experimentados hasta entonces: volvió á repetir á $4^h$ y desde esta hora casi fueron continuos hasta que comenzó la erupción."

"Amaneció el Martes y apenas había yo visto en Camarines una mañana más serena y apacible y un horizonte más despejado. Noté sin embargo que los cerros más inmediatos al volcán estaban cubiertos de una neblina que yo creí ser humo de alguna casa que aquella noche se había quemado. Dieron las $8^h$ de aquella mañana fatal á cuya hora el volcan comenzó á arrojar de repente una espesa columna de piedras, arena y cenizas que con la mayor velocidad se elevó en un momento á lo más alto de la atmósfera, á cuya vista quedamos sorprendidos y llenos del más grande pavor, y más cuando notamos que á toda prisa se iba cubriendo la falda del volcán. Jamás habíamos visto una semejante erupción: desde luego nos llegamos á persuadir de que un grande arroyo de fuego se venía sobre nosotros y nos iba á consumir, así que nos pusimos en precipitada fuga." Cagsaua, donde se hallaba el autor de las últimas precedentes líneas, está á unos 10 kilómetros al SSE del volcán. Á causa del viento reinante del NE, la erupción se precipitó sobre la región S y SW, destruyendo completamente los tres pueblecitos más cercanos y en parte otros dos dentro de un radio de más de 15 kilómetros: quedaron asolados por completo todos los sembrados y plantas, con muerte de más de 1,200 personas, en 5 horas escasas que duró lo más fuerte de la erupción. La cantidad de deyecciones sólidas, piedras, arena y ceniza ó polvo, arrojada por el volcán fué tan exorbitante que en pueblos distantes 10 kilómetros quedó una capa de unos 0.40 metros. Las detonaciones de esta erupción se oyeron desde los puntos más distantes del Archipiélago y el polvo volcánico llevado por las corrientes atmosféricas llegó hasta Manila y otras provincias más distantes.

Tan horrible y desastrosa erupción fué precedida, según atestigua el mencionado Párroco de Guinobatan, de temblores de tierra frecuentes pero de poca intensidad durante unas 24 horas y de temblores muy frecuentes é intensos durante las 10 ó 12 horas inmediatas á la catástrofe. El autor no menciona ruidos subterráneos antes de la erupción; tampoco habla ya más de temblores de tierra desde el momento en que reventó el volcán.

**1853. Volcán Mayon, 13 de Julio.**—Dícese que esta erupción fué precedida de fuertes ruidos subterráneos, pero sin terremotos. Hacia $12^h$ de la expresada fecha vióse una inmensa columna de humo y cenizas, rodando al mismo tiempo por las laderas del cono volcánico piedras incandescentes que destruyeron muchas casas en los cultivos ó sementeras y causaron la muerte de 33 personas é hirieron otras muchas. La erupción duró solamente unas pocas horas, toda la región más próxima que rodea el volcán quedó cubierta de una regular capa de ceniza. No se especifica si los ruidos subterráneos precedieron horas ó días, de tal manera que la gente tuviese tiempo de alejarse.

Cítanse otras pequeñas erupciones correspondientes á los años 1827, 1828, 1835, 1845, 1846, 1851, 1855, 1858 y 1868.

**1871. Volcán de Camiguín, 30 de Abril.**—Este volcán situado en la pequeña Isla de Camiguín, cerca de la costa N de Mindanao, había estado durmiente desde tiempo inmemorial. Tan solo corrían noticias vagas de que en la montaña más septentrional de la isla, evidentemente volcánica, existía una laguna circular cuyas aguas se habían visto emitir en diferentes épocas gran cantidad de vapores.

Llegó el año 1871 y desde mediados de Febrero hasta la fecha de la erupción se sintieron diariamente en toda la pequeña isla y principalmente en su extremidad N, temblores de tierra de variable intensidad, si bien 4 ó 5 de ellos fueron destructores y se sintieron en toda la extensa región de las Islas Visayas y Mindanao.

Por fortuna, debido á la diligencia del gobernadorcillo del pueblo de Catarman, distante una milla escasa del sitio donde reventó el volcán y en gran parte destruído por la erupción, poseemos el catálogo casi completo de la serie de temblores que precedieron á la erupción. Á continuación damos un resumen de dicho catálogo; en él se verá que desde el 16 de Febrero hasta el 29 de Abril no se pasó un solo día sin sentirse varios temblores de tierra, generalmente acompañados de ruidos subterráneos procedentes del interior de la montaña próxima. Esta última circunstancia y los grandes derrumbes y grietas producidos en sus laderas fué lo que bien pronto sugirió á los habitantes de los pueblos vecinos la idea de una futura erupción volcánica.

| Fecha. | Temblores de tierra. | Notas. |
|---|---|---|
| Febrero 16 | Dos temblores ligeros | |
| Febrero 17 | Frecuentes todo el día y noche | |
| Febrero 18 | id | 1 de intensidad VIII. |
| Febrero 19 | id | 1 de intensidad VII. |
| Febrero 20 | id | |
| Febrero 21 | id | 1 de intensidad IX. |
| Febrero 22 | id | 1 de intensidad VIII. |
| Febrero 23 á 28 | id | |
| Marzo 1 á 3 | id | |
| Marzo 4 | id | 1 de intensidad VI. |
| Marzo 5 á 7 | Menos frecuentes, no más de 10 diarios | |
| Marzo 8 | id | 2 de intensidad VI. |
| Marzo 9 | id | |
| Marzo 10 | id | Id. |
| Marzo 11 á 13 | id | |
| Marzo 14 á 17 | Menos frecuentes, 4 ó 5 diarios | |
| Marzo 18 á 19 | Más frecuentes y fuertes que los días precedentes | |
| Marzo 20 á 31 | Menos frecuentes, no pasan de 6 diarios | |
| Abril 1 á 29 | Frecuentes todo el mes sin bajar de 6 ni pasar de 10 diarios | |
| Abril 30 | A $7^h$ con una espantosa detonación y una nube de vapores, piedras y ceniza explotó un volcán en el extremo NNE de la isla y á pocos metros de la playa del mar. Continuó luego surgiendo pacíficamente lava en estado semifluido durante unos 3 años, formándose un cono de unos 400 metros de altura. Las cenizas de la primera explosión se extendieron á 200 kilómetros al rededor del volcán. La devastación fué completa en un radio de 2 á 3 kilómetros al rededor del nuevo cono volcánico. Los terremotos cesaron casi por completo desde los primeros días después de la erupción. No hubo desgracias personales por haberse retirado mucho antes los habitantes de Catarman, que es el pueblo más próximo, y el único que fué destruído: muchas personas se habían ya embarcado para otras islas desde fines de Febrero. | |

**1871. Volcán Mayon, 8 de Diciembre.**—Amaneció este día percibiéndose algunos ruidos subterráneos y habiéndose oído tres muy fuertes entre 7 y 8 de la mañana se vió en la cúspide del volcán una gruesa columna de humo, luego se notó la salida de cenizas, arena y lavas arrojadas con poca violencia: sin embargo la nube de humo y cenizas impulsada por el viento del NE envolvió toda la parte S y SW del volcán, causando verdadera oscuridad hasta una distancia de 20 kilómetros. Á las $10^h$ se despejó, pero á la una de la tarde explotó la grande erupción con fuertes detonaciones y relámpagos: cayó gran cantidad de ceniza hasta 30 kilómetros del volcán y las corrientes de lava llegaron por el S y SE á los barrios más próximos. No se sabe que pereciesen más que dos personas, una de asfixia y otra quemada: estas víctimas perecieron á unos 10 kilómetros al SE del volcán. Los demás habitantes de esta región más azotada, sin duda se habían alejado á los primeros síntomas de la erupción, que comenzaron á notarse unas 8 ó 10 horas antes. No se hace mención ninguna de temblores de tierra.

**1872. Volcán Mayon, Septiembre.**—Pequeños derrames de lava acompañados de ruidos subterráneos y débiles explosiones.

**1873. Volcán Mayon, 15 de Junio á 22 de Julio.**—Pequeños derrames de lava acompañados de ruidos subterráneos y débiles explosiones: las principales ocurrieron la noche del 20 al 21 de Junio.

**1874. Volcán Taal, 19 de Julio.**—Explosión de gases y ceniza que cubrió toda la isla, matando la vegetación y no poco ganado que en ella se criaba.

**1878. Volcán Taal, 1 á 15 de Noviembre.**—Durante muchos días se oyeron frecuentes ruidos en el volcán, al fin desde el 12 al 15 de Noviembre hubo pequeñas explosiones; quedando toda la isla cubierta de ceniza.

**1881 y 1882. Volcán Mayon, 6 de Julio, 1881.**—Enero, 1882.—Este largo período de erupción se distinguió por la tranquila deyección de lava á través de varias bocas ó grietas que forman las hendiduras y rajas superiores del cono, en su parte S y SSE: las lavas salían en estado casi sólido, fragmenticio é incoherente, aunque siempre incandescentes; hubo incrementos y decrecimientos irregulares de actividad; durante algunas noches se oían ruidos subterráneos muy profundos, generalmente precursores de mayor abundancia en la deyección de lava.[1] No causó daño ninguno. Las principales explosiones tuvieron lugar el 21 de Noviembre y el 14 de Diciembre.

**1885. Volcán Mayon, 23 y 24 de Noviembre, 2 de Diciembre.**—Erupciones de lava, con ruidos subterráneos, que comenzaron ya el día 21. Los arroyos de lava no llegaron á los sitios cultivados y habitados.

**1887. Volcán Mayon, 22 de Febrero á 10 de Marzo.**—Lo más fuerte de esa erupción, que duró, con intervalos más ó menos largos de calma, unos 20 días, se venía ya anunciando desde un período eruptivo de menor importancia durante el año precedente. En realidad desde el 8 de Julio de 1886 el volcán no había cesado de arrojar frecuentemente lava y cenizas en muy pequeña cantidad. Las cuatro principales explosiones de la erupción de 1887 tuvieron lugar el 22 y 27 de Febrero, y el 1 y 9 de Marzo: arrojó el volcán grandes cantidades de lava, á la par que inmensas nubes de ceniza; éstas se extendieron á más de 20 kilómetros al rededor del cono volcánico. Parece que solamente durante las explosiones del 1 de Marzo se oyeron intensos ruidos subterráneos, mas no se hace mención de temblores de tierra. Desde el 22 de Febrero los habitantes de los barrios del S, hacia donde parecían dirigirse las corrientes de lava, habían buscado refugio en sitios más seguros.

**1888. Volcán Mayon, 15 de Diciembre; 1890, 30 de Septiembre y 1 de Octubre; 1891, 3 á 18 de Octubre.**—Tres erupciones de poca importancia acompañadas todas de ruidos subterráneos pero no de temblores. La más importante fué la del año 1890, en que las corrientes de lava llegaron hasta los campos cultivados de los barrios orientales más próximos, pero sin causar daños apreciables. Esta erupción se anunció ya el día 10 de Septiembre y no llegó á su mayor intensidad hasta el 30 del mismo mes.

**1892. Volcán Mayon, 21 á 29 de Febrero.**—El día 3 comenzó á observarse resplandor ó incandescencia en el volcán y el 9 se vió que había ya algún derrame de lava. El 21 principió la verdadera erupción con explosiones que arrojaban bombas volcánicas á gran distancia, mucha ceniza y regular cantidad de lava fluyente: así continuó con intervalos variables de calma, hasta el 29. Los materiales arrojados por el volcán cayeron á poca distancia del cráter y así no hubo que lamentar desgracias personales ni pérdidas materiales: sin embargo los habitantes de los barrios más próximos, situados en las vertientes orientales del inmenso cono, habían ya tomado la precaución de alejarse del peligro. Lo singular de esta erupción fué que no hubo ruidos subterráneos hasta el 24, cuando llegaba ya á su mayor intensidad: no se mencionan temblores de tierra.

**1893. Volcán Mayon, 2 á 22 de Octubre.**—Anuncióse la erupción los días 2 y 3 de Octubre con ruidos subterráneos que solo se oían de los pueblos más cercanos al cono. El día 4 al anochecer comenzó á distinguirse vivo resplandor que salía del cráter; el día siguiente se oyeron explosiones y comenzó á salir una inmensa columna de humo y ceniza y á derramarse lava, pero sin llegar aún á gran distancia del cráter.

El 6 por la tarde entró el volcán en plena erupción, con intensos ruidos y una columna inmensa de humo y ceniza, bombas volcánicas y torrentes de lava por el lado oriental y occidental: el 8 comenzó á disminuir algo la fuerza de la erupción, aunque se prolongó hasta el 22; la ceniza llegó á distancias de 30 y 40 kilómetros. Aunque las corrientes de lava destruyeron muchos sembrados en la parte oriental del volcán, pereciendo también en ellos buen número de animales, no hubo sin embargo que lamentar desgracia alguna personal por haberse alejado las gentes de los barrios más próximos durante los 4 días que precedieron á la grande erupción. Sintiéronse dos temblores de tierra; uno el 11 y otro el 18 en que duraba aún la actividad volcánica extraordinaria.

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[1] Véase "El Mayon ó volcán de Albay," por D. Enrique Abella y Casariego. Madrid, 1885.

**1895 y 1896. Volcán Mayon, Julio y Septiembre.**—Fueron más bien principios de erupción ó tal vez erupciones abortadas, acompañadas de ruidos subterráneos pero no de temblores de tierra. El volcán arrojó alguna lava y piedras candentes, á poca distancia del cráter. La primera ocurrió el 20 de Julio de 1895 y duró sólo una hora; la segunda duró desde el 31 de Agosto hasta el 26 de Septiembre de 1896.

**1897. Volcán Mayon, 25 y 26 de Junio.**—Esta erupción de lava fluente, piedras y cenizas causó unas 350 víctimas en cinco pequeños barrios situados sobre la vertiente oriental del volcán y á unos 6 kilómetros del cráter. Asegúrase que ya el día 22 se notó algo extraordinario en la actividad del volcán. Al anochecer del 23, pudo ya observarse distintamente que arrojaba piedras candentes y había algún derrame de lava, acompañado de ruidos subterráneos. Al amanecer del 24 aumentaron los ruidos, siendo algunos tan intensos que hacían retemblar la tierra. No se sintió sin embargo terremoto alguno propiamente dicho. Á las 10 de la mañana la erupción comenzó á ser imponente, los nubarrones de vapores y cenizas cubrían todas las cercanías del volcán, especialmente hacia el E, á donde eran llevados por el viento reinante. La lava fluía también con más abundancia por el lado oriental, indicada por las fumarolas, que parecían precipitarse por las vertientes del volcán. Así continuó todo el día y la siguiente noche del 24 al 25. Á las 6 de la mañana de esta última fecha comenzó la grande erupción. La lava corrió á torrentes por el lado oriental hasta el mar, que dista unos 20 kilómetros, arrollando cuanto se encontró á su paso. Inmensas nubes de vapores y ceniza envolvieron toda la región como para ocultar la catástrofe con las tinieblas: todo esto acompañado de retumbos espantosos que se oían á más de 250 kilómetros de distancia. Este paroxismo duró hasta la mañana del 26, aproximadamente unas 24 horas. Las cenizas llegaron á distancias de 160 kilómetros hacia el W y NW y á mucho mayores hacia el E.

Á esta erupción no precedieron ni acompañaron verdaderos terremotos: precediéronla sin embargo síntomas algo dudosos de nueva erupción durante 50 horas, y un aumento extraordinario de actividad, con crecientes ruidos subterráneos durante 27 horas. Dió por consiguiente tiempo á los habitantes de los barrios más próximos al cráter para ponerse en salvo y no ser víctimas del cataclismo. No todos sin embargo lo lograron.

**1903.[1] Volcán Taal, Abril.**—Pequeña erupción explosiva que probablemente duró hasta 1904. Abrióse un pequeño cráter dentro del principal y estuvo arrojando á intervalos, lodo y piedras á poca distancia. Las principales explosiones no hay duda que tuvieron lugar durante la primera quincena de Abril de 1903; en algunas publicaciones, sin embargo se las asigna á 1904.[2]

**1911. Volcán Taal, 30 de Enero.**—Los terremotos precursores comenzaron la noche del 27, continuaron con creciente intensidad y frecuencia todo el 28 y el 29. Además el volcán entró al mismo tiempo en actividad extraordinaria, arrojando ya lodo y ceniza durante las 52 horas que transcurrieron entre los primeros terremotos y la grande explosión, que ocurrió poco después de $2^h$ a. m. del día 30. Tenemos pues que á esta mortífera explosión precedieron 52 horas de temblores de tierra y de ruidos subterráneos y actividad volcánica muy alarmantes. Semejante estado de cosas fuera más que suficiente para alejarse á todo trance del volcán: así muchas de las 1,300 víctimas se hubieran salvado. Los temblores de tierra continuaron por muchos días después de la grande erupción á pesar de que el estado eruptivo del volcán había disminuido de tal manera que el día 1 de Febrero parecía haber vuelto ya á su estado normal.[1]

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[1] Véase el "Monthly Bulletin Phil. Weather Bureau, April, 1903."

[2] "Geological Reconnaissance of Southwestern Luzon." By George I. Adams. The Philippine Journal of Science, Vol. V, No. 2, March, 1910.—"The Eruption of Taal Volcano, January 30, 1911." By Rev. M. Saderra Masó, S. J., Manila, 1911.

En la plancha VIII que acompaña el texto inglés se verá el diagrama de la frecuencia de temblores desde el 27 de Enero al 5 de Febrero, así como el estado de la presión atmosférica durante esta terrible erupción del Volcán Taal. Dicho diagrama se ha trazado con los registros de los aparatos siguientes: Seismógrafo Vicentini, Péndulos Horizontales (sistema Omori), y Seismógrafo Wiechert, todos montados en el Observatorio de Manila que dista del volcán Taal 63 kilómetros. Comprende por consiguiente tanto los temblores de tierra perceptibles, que á esta distancia llegaron á la intensidad IV, como los puramente instrumentales, ó del grado I de la escala.

## III. DISCUSIÓN.

En las precedentes páginas hemos reseñado 21 erupciones principales; 13 del volcán Mayon, 7 del Taal y una de Camiguin. Solamente dos causaron un número considerable de víctimas: la del Mayon de 1814, de la que resultaron 1,200 muertos, con inmenso número de heridos, y la última del Taal, 1911, en que perecieron unas 1,300 personas. Á primera vista ya presentan caracteres distintos las erupciones del Taal y las del Mayon: las primeras han sido siempre de carácter explosivo sin fluir nunca lava; las segundas pueden llamarse mixtas, consistiendo generalmente en explosiones que parecen abrir el camino á la lava que continúa después fluyendo sin grandes esfuerzos. Las erupciones del Taal casi siempre van acompañadas no solo de grandes detonaciones y ruidos subterráneos sino también de fuertes terremotos los cuales continúan aún después de la erupción: en las del Mayon no se notan tales conmociones terrestres.

Lo que hace más á nuestro propósito es que ni en un volcán ni en otro los paroxismos, ó la máxima intensidad de sus erupciones se presentaron nunca tan repentinamente que no precedieran algunas horas por lo menos de indicios sospechosos, ó de erupción de poca intensidad. Esta afirmación es aplicable también á la erupción del Taal en 1749; pues aunque vino muy de improviso, según testimonio del Cura de Sala, dió tiempo sin embargo para alejarse, y hasta presentó el volcán resplandores ó indicios unas 4 horas antes. Solamente alguna erupción del Mayon ha sido anunciada por temblores de tierra precursores; tomando esta palabra en el sentido de haber los temblores realmente precedido á las primeras manifestaciones extraordinarias de actividad volcánica. Más frecuentemente precedieron á las erupciones de este volcán ruidos subterráneos, unas veces simultáneos con una mayor emisión de vapores, y otras sin aumento aparente de actividad.

La erupción de 1814, precedida de temblores de tierra, fué de carácter principalmente explosivo y sobrevino después de muchos años, durante los cuales el volcán permaneció tan durmiente que había llegado á desaparecer el penacho de vapores que suele coronar siempre su cúspide. No parece sino que los antiguos respiraderos se habían obturado y así la nueva erupción se abrió camino con tal violencia que cuarteó é hizo volar la parte superior del cono, según indica el autor de la relación arriba citada. "La cúspide," dice, "ó cráter del volcán bajó á mi parecer más de 20 varas y por la parte del Sur quedó descubierta una espaciosa y horrenda boca que causaba espanto mirarla; se abrieron también otras tres nuevas á bastante distancia de la principal, que continuaron por mucho tiempo arrojando humo y ceniza." Es pues probable que la inmensa cantidad de piedras, arena y polvo que cubrieron las cercanías del volcán, procedieron en gran parte del mismo cono, arrancadas por las explosiones; no se menciona salida alguna de lava en esta ocasión, en ninguna de las relaciones que varios autores escribieron.

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[1] Para más detalles acerca de las erupciones del volcán Mayon y del volcán Taal véanse los escritos siguientes: "La Erupción del volcán Mayon, 1897." Por el P. José Coronas, S. J., Manila, 1898. "The Eruption of Taal Volcano, January 30, 1911." By Rev. Miguel Saderra Masó, S. J., Manila, 1911.

La erupción del volcán de Camiguin revistió caracteres especiales y propios de las que tienen lugar en volcanes aparentemente extintos, en los cuales las antiguas chimeneas deben estar obturadas con lavas solidificadas hasta una gran profundidad. De aquí el prolongado é inmenso esfuerzo que la lava y los vapores necesitaron para abrirse de nuevo camino al exterior: esfuerzo manifestado por dos meses y medio de continuos terremotos. Al fin la rotura se verificó no precisamente por el antiguo cráter sino por la base del cono volcánico, por ofrecer sin duda esta parte menor resistencia. Caso análogo á lo sucedido en el Usu-San en 1910. Los débiles temblores de tierra que se sintieron todavía en Camiguin durante los primeros días de la erupción, eran probablemente debidos en su mayor parte á las vibraciones producidas por el mismo violento escape de lava y vapores.

De todo lo dicho parece poder deducirse:

(1) Que en Filipinas solamente las erupciones de volcanes aparentemente extintos ó por largos años durmientes han sido precedidas de temblores de tierra, y que estos mismos han acompañado las grandes erupciones explosivas; pero no las erupciones de lava fluente.

(2) La intensidad de las erupciones ha sido generalmente inversamente proporcional á su duración, excepto durante el largo período eruptivo del Taal en 1754.

(3) Los temblores de tierra que acompañaron casi siempre y siguieron á las grandes erupciones del Taal, no pueden atribuirse á las vibraciones producidas por el escape violento de las deyecciones, sino á movimientos geológicos á lo largo de la falla en que se halla el volcán. Esta conclusión parece deducirse tanto de su persistencia, después que el volcán vuelve ya á su estado normal, como de la diferente área de máxima intensidad y efectos que suelen tener; prolongada unas veces al NNE (1749), y otras al SSW del volcán (1911). En cambio los temblores de poca intensidad que algunas veces se han sentido durante las erupciones del Mayon, pueden bien atribuirse á vibraciones superficiales del mismo cono volcánico.

(4) Que tanto las erupciones explosivas del Taal como las de lava del Mayon han aumentado progresivamente, desde un principio, indicado, ya con temblores, ya con ruidos subterráneos ó con ambos fenómenos á la vez, hasta un máximo que ha sobrevenido algunos días, y en pocos casos, unas horas después: el intervalo mínimo puede decirse que fué de cuatro horas. No es por consiguiente aventurado el afirmar que todas han dado tiempo á los habitantes de los sitios más próximos y peligrosos para alejarse á otros más seguros.

## IV. LLUVIA.

Las erupciones del Mayon cuya fecha es conocida pueden reducirse á 22. y se reparten de la siguiente manera entre los meses del año: Enero 1, Febrero 3, Marzo 1, Abril y Mayo 0, Junio 2, Julio 4, Agosto 0, Septiembre 3, Octubre 3, Noviembre 2, Diciembre 3. Las 8 del Taal, cuyo mes se conoce, ocurrieron todas en diferentes meses, quedando sin ninguna los de Febrero, Junio, Octubre y Diciembre: esto si hacemos caso omiso de las explosiones de menor importancia que durante el largo período eruptivo (Mayo á Diciembre) de 1854, ocurrieron en tres de estos cuatro meses. Por manera que si atendemos tanto al número como á su intensidad no hallaremos apenas diferencia entre el número de las erupciones del Taal que tuvieron lugar durante el período seco, Enero–Mayo, y el de las acaecidas en el lluvioso, Junio–Diciembre. La erupción del volcán de Camiguin principió el último día de Abril. Por consiguiente tan solo las 22 del Mayon se prestan para una comparación con la distribución de las lluvias.

En la región de este volcán no existe propiamente estación seca y estación de lluvias, como en otras partes del Archipiélago: el promedio mensual de la lluvia deducido de 14 años de observaciones pluviométricas hechas parte en Albay y parte en Legaspi, distantes entre sí 2 kilómetros escasos, demuestra que existen cinco meses, Marzo, Abril, Mayo, Junio y Agosto con una cantidad media de lluvia que oscila entre 147 y 220 milímetros, y los siete restantes en que los promedios oscilan entre 250 y 484 milímetros. Si sumamos el número de erupciones que tuvieron lugar en las dos series de meses veremos que corresponden 3 erupciones á los primeros y 19 á los segundos: resultado que apenas se modifica si á las del Mayon se agregan las del Taal y la única de Camiguin, siempre resulta triple número para la temporada de mayores lluvias.

## V. PRESIÓN ATMOSFÉRICA.

La presión media de cada período eruptivo se compara con su correspondiente promedio mensual y con la normal. Por falta de observaciones barométricas más antiguas este estudio solo comprende las erupciones ocurridas después del año 1890, que son 7 del volcán Mayon y una del Taal. Omitimos la de este volcán que tuvo lugar en 1903, por la incertidumbre que existe acerca de su duración: se sabe cierto que comenzó en Abril de 1903, pero se duda si tuvo un segundo período en el mismo mes de 1904. Debemos sin embargo advertir que la primera quincena de Abril de 1903 fué de presión barométrica 0.91 milímetros superior á la normal, mientras que durante la misma quincena de Abril de 1904 fué por el contrario 0.91 milímetros inferior.

Los datos van distribuidos en el siguiente cuadro: La primera columna lleva el volcán, el mes, año y período principal eruptivo; en la segunda, señalada con la letra (a), damos la presión normal correspondiente al mes de cada erupción, deducida de 12 años de observaciones al tratarse del Mayon, y de 26 años al tratarse del Taal. Para el primer caso nos hemos servido de las observaciones de Albay, y para el segundo de las de Manila. La tercera columna (b) presenta la presión media del mes en que ocurrió la erupción; y la cuarta (c) el promedio de los días que duró cada período eruptivo. Al fin van las diferencias entre los precedentes valores.

| Erupciones y período eruptivo. | Presión atmosférica media. | | | Diferencias. | | |
|---|---|---|---|---|---|---|
| | Normal. a | Mensual. b | Período eruptivo. c | a-b | b-c | a-c |
| Mayon, Septiembre, 1890 (10 Sept. á 4 Oct.) | 757.5 | 755.0 | 754.8 | —2.5 | —0.2 | —2.7 |
| Mayon, Octubre, 1891 (1 á 20) | 758.4 | 758.4 | 758.7 | 0.0 | +0.3 | +0.3 |
| Mayon, Febrero, 1892 (21 á 29) | 761.7 | 760.2 | 759.0 | —1.5 | —1.2 | —2.7 |
| Mayon, Octubre, 1895 (2 á 11) | 758.4 | 758.0 | 756.4 | —0.4 | —1.6 | —2.0 |
| Mayon, Julio, 1895 (20) | 757.9 | 757.8 | 754.7 | —0.1 | —3.1 | —3.2 |
| Mayon, Septiembre, 1896 (30 Ag. á 8 Sept.) | 757.5 | 758.0 | 757.3 | +0.5 | —0.7 | +0.2 |
| Mayon, Junio, 1897 (21 á 30) | 757.7 | 757.2 | 756.6 | —0.5 | —0.6 | —1.1 |
| Taal, Enero, 1911 (26 Enero á 5 Febr.) | 761.0 | 759.8 | 758.3 | —1.2 | —1.5 | —2.7 |

Los valores de este cuadro son ciertamente curiosos aunque no concluyentes, por tratarse de tan corto número de casos. No solamente la presión media del período eruptivo, pero aun la mensual, resulta siempre menor que la normal, excepto en dos casos. Además si se dan á las diferentes erupciones valores que representen su intensidad relativa, se ve que entre éstos y el déficit de la presión atmosférica hay verdadera proporción directa.

El más notable es el último caso de 1911. En 31 años, ó sea durante el período 1880 á 1911, solo una vez, 1890, la presión media del mes de Enero había resultado tan baja como en 1911. Por otra parte el período de 6 días, del 26 al 31 de Enero, 1911, en que el valor diario medio de la presión atmosférica se mantuvo constantemente entre 757.2 y 758.2 milímetros, es único en los registros de este Observatorio desde 1880. Este año hubo 3 días de baja presión que fueron el 6, 7 y 8, con un promedio diario de 757.4 á 757.8 milímetros.

## VI. INUNDACIONES RELACIONADAS CON LOS VOLCANES MAYON Y BANAHAO.

Antes de concluir estas notas debemos añadir unas líneas sobre un fenómeno meteorológico asociado á los volcanes y que tanto en Filipinas como en otras partes se atribuyó antiguamente á verdaderas erupciones. Nos referimos á los torrentes de fango, piedras y arena, que en épocas de lluvias excepcionales suelen producirse en las vertientes de los conos volcánicos, los cuales á manera de avalancha se precipitan sobre las campiñas circundantes, llevando á ellas la destrucción y la muerte.

El primer caso que recuerda la historia del volcán Mayon ocurrió el 23 de Octubre de 1766, por efecto de las lluvias torrenciales de un ciclón que pasó á poca distancia por el N de la Provincia de Albay. No se cita el número de víctimas, pero debió ser grande á juzgar por la devastación causada en los pueblos y sembrados de la parte meridional del volcán. El 31 de Octubre de 1875 otro ciclón causó en las cercanías del mismo volcán una hecatombe de igual carácter en que perecieron 1,500 personas.

Dos hechos semejantes se citan también del volcán extinto de Tayabas, llamado Banahao (121° 27′ Long. E; 14° 2′ Lat. N). Uno ocurrió en 1743;[1] la más probable versión es que el borde meridional del antiguo cráter cedió á la presión del agua que lo llenaba, y precipitándose ésta sobre el pueblo de Saryaya y sus campiñas en forma de avalancha de piedras y lodo lo destruyó todo, no sin muerte de buen número de personas. Últimamente en Enero de 1909 se repitió el hecho aunque con menores proporciones: esta vez la causa parece haber sido que durante la época de lluvias de 1908 se produjeron grandes desprendimientos de terreno en los bordes de una de las principales barrancas, que en la parte S se abren desde la cumbre del volcán hasta el mar, cegándola completamente y formándose en la parte superior una laguna. Filtróse por fin el agua, el improvisado dique cedió, y una regular avalancha de lodo y piedras destruyó muchos sembrados pertenecientes al pueblo de Saryaya. Ambas ocurrencias, la de 1743 y la de 1909 se anunciaron equivocadamente como verdaderas erupciones del volcán Banahao. Lo mismo debe decirse de los dos casos citados ocurridos en el Mayon, los cuales en algunas historias figuran entre las erupciones de dicho volcán.

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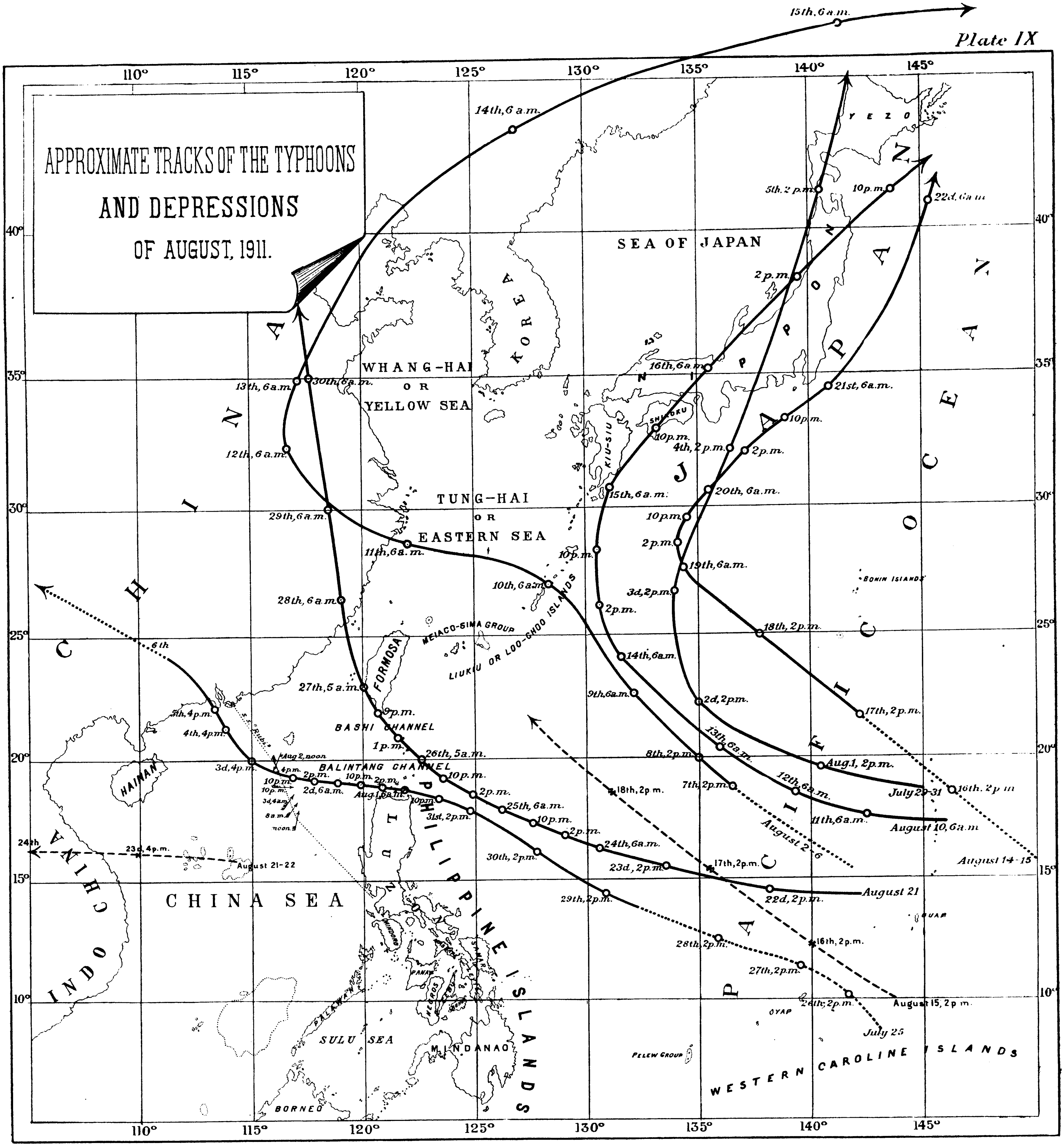
[1] Algunos autores colocan este hecho en el año 1730. En el "Estado Geográfico etc. de la Apostólica Provincia de San Gregorio Magno," por el P. Fr. Felix de Huerta, Binondo (Manila) 1865, pág. 231, se dice que: "en 1743 (se trasladó el pueblo de Saryaya) por haber reventado la gran laguna en que se convirtió el referido volcán (Banahao), cuando hizo su última erupción en el año 1730." Lo mismo se repite en la pág. 232: hablando de la Iglesia de Saryaya "que se arruinó completamente en los temblores de 1743," prosigue el autor: "En el mismo año reventó la gran laguna del Banahao y sus corrientes arrasaron casi todo el pueblo, etc." Lo que se llama última erupción del año 1730 fué por ventura otro acontecimiento semejante al de 1743 y no verdadera erupción? Lo cierto es que no la encontramos citada en ninguna relación anterior á la publicación del "Estado Geográfico."

# BULLETIN FOR AUGUST, 1911.

*Plate IX*



APPROXIMATE TRACKS OF THE TYPHOONS AND DEPRESSIONS OF AUGUST, 1911.

UofM

# METEOROLOGICAL BULLETIN FOR AUGUST, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—Like the mean atmospheric pressure for the preceding month, that for August, 1911, was lower than the mean for the corresponding month of the year 1910, the largest differences being found for northern Luzon, by reason of its closer proximity to the typhoons and depressions to be discussed forthwith. For Manila, the monthly mean differs from the normal for the month by—1.18 millimeters and from the mean of August, 1910, by—1.01 millimeters.

With the exception of five stations situated in Mindanao and the Visayas, all the stations report a mean monthly temperature slightly below the corresponding value for August of last year. At Manila the following extremes have been registered: 32.7°C. on the 11th, and 22.1°C. on the 21st.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR AUGUST, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from August, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from August, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Tagbilaran | 757.37 | | 759.14 | 15 | 755.57 | 10 | | | | | | |
| Surigao | 57.04 | — 0.55 | 59.11 | 15,16 | 54.96 | 24 | 27.9 | + 0.6 | 33.9 | 31 | 22.1 | 18 |
| Cebu[1] | 57.04 | — .40 | 59.20 | 16 | 55.20 | 10 | 27.4 | + .4 | 33.8 | 9 | 22.1 | 17 |
| Iloilo | 57.33 | — .39 | 59.48 | 16 | 55.35 | 25 | 26.6 | — .3 | 30.1 | 7 | 22 | 14 |
| Ormoc | 57.24 | — .46 | 59.50 | 16 | 55.30 | 10 | 26.9 | + .8 | 32.6 | 7 | 21.8 | 19 |
| Tacloban | 56.80 | | 59.26 | 16 | 54.53 | 24 | 27.8 | + .2 | 35 | 31 | 22.6 | 19 |
| Capiz[2] | 56.91 | — .75 | 59.32 | 16 | 54.75 | 25 | 26.8 | — .4 | 35.3 | 9 | 21.8 | 19 |
| Calbayog | 56.70 | — .78 | 59.27 | 16 | 54.06 | 25 | 27.8 | + .6 | 34 | 5 | 21.9 | 18 |
| Legaspi | 56.10 | — 1.15 | 58.76 | 16 | 52.79 | 25 | 27.2 | — .2 | 33.2 | 6 | 21.1 | 18 |
| Atimonan | 55.74 | — 1.14 | 58.64 | 16 | 52.41 | 25 | 27.6 | — .3 | 34.3 | 31 | 20.9 | 21 |
| Paracale | 55.57 | | 58.63 | 16 | 51.57 | 25 | 28 | | 35 | 6,17 | 22 | 24 |
| Manila | 56.18 | — 1.01 | 59.20 | 16 | 53.14 | 25 | 26.8 | — .1 | 32.7 | 11 | 22.1 | 21 |
| San Isidro | 56.03 | — .97 | 58.92 | 16 | 52.93 | 26 | 26.4 | — .4 | 33.6 | 7 | 22 | 21,22 |
| Dagupan | 55.64 | — 1.24 | 58.50 | 16 | 52.23 | 26 | 26.7 | — .5 | 34.6 | 23 | 22.6 | 19,31 |
| Baguio[3] | 633.71 | — 1.47 | 636.57 | 16 | 630.27 | 26 | 17.1 | — .8 | 23.5 | 23 | 13.5 | 2 |
| Vigan | 754.98 | — 1.78 | 758.20 | 16 | 749.71 | 1 | 26.2 | — .6 | 31.5 | 22 | 20.9 | 11 |
| Tuguegarao | 54.25 | — 2.07 | 57.62 | 16 | 48.66 | 26 | 27.2 | — .9 | 35.7 | 12 | 22 | 1 |
| Aparri | 53.75 | — 2.65 | 57.39 | 16 | 45.92 | 1 | 26.7 | — 1 | 33.3 | 17 | 22.2 | 1 |

[1] 27 days of observation. [2] 28 days of observation. [3] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—As a rule, the total rainfall during the month has been in excess of that during August, 1910, at the stations of northern Luzon, from Aparri down to Manila; while in the rest of the Archipelago it has generally been less. The total amount collected in the pluviometers of the Central Observatory exceeds the amount which fell during August, 1910, by 144.8 millimeters, and the normal for the month by 66.5 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF AUGUST, 1911.

| Station. | Total. | Departure from August, 1910. | Rainy days. | Departure from August, 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from August, 1910. | Rainy days. | Departure from August, 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 54.7 | —234.2 | 7 | —10 | 22.9 | 22 | Sumay, Guam | 500.4 | + 348.9 | 24 | + 1 | 63.5 | 23 |
| Isabela, Basilan | 212.6 | —107 | 14 | — 9 | 51.3 | 6 | Calapan[3] | 74.3 | ------ | ---- | ------ | 35.8 | 13 |
| Zamboanga | 75.9 | ------ | 9 | ------ | 22.9 | 12 | Virac | 84.5 | — 69.9 | 11 | + 1 | 21.8 | 23 |
| Davao | 138.4 | —117.3 | 6 | — 5 | 29.2 | 22 | Nueva Caceres | 106.5 | — 59.2 | 10 | — 3 | 26.7 | 22 |
| Butuan | 46.9 | — 43.7 | 8 | — 7 | 27.4 | 22 | Batangas | 146.1 | — 22.3 | 12 | — 4 | 27.5 | 12 |
| Dumaguete | 46.6 | — 44 | 9 | — 1 | 15.2 | 10 | Atimonan | 36.1 | — 12.4 | 8 | — 1 | 21.3 | 18 |
| Yap. W. Carolines | 357.4 | +130.1 | 20 | — 4 | 61.7 | 2 | Silan | 258.4 | — 123.6 | 14 | — 4 | 63.3 | 14 |
| Tagbilaran | 8.1 | —160.4 | 4 | —10 | 3 | 20 | Paracale | 92.2 | ------ | 7 | ------ | 71.5 | 24 |
| Surigao | 142.2 | + 83.2 | 10 | + 3 | 42.4 | 18 | Manila | 419.4 | + 144.8 | 25 | + 5 | 133.1 | 13 |
| Maasin | 122.4 | —177.7 | 5 | — 5 | 40.1 | 25 | Antipolo | 626.3 | + 267.1 | 25 | + 4 | 126.2 | 13 |
| Cebu[1] | 55.9 | ------ | ---- | ------ | 21.1 | 17 | Iba | 684.9 | — 80.2 | 27 | + 2 | 125.4 | 1 |
| Iloilo | 235.3 | + 90.7 | 20 | + 5 | 42.5 | 14 | San Isidro | 210.8 | + 68.9 | 25 | + 6 | 26.7 | 30 |
| San Jose Buenavista | 521.6 | +101.7 | 22 | 0 | 110 | 12 | Tarlac | 215.2 | — 41.1 | 22 | 0 | 50.1 | 19 |
| Cuyo | 392 | + 59 | 20 | + 2 | 81.3 | 12 | Baler | 78.4 | — 69.8 | 13 | + 7 | 31.5 | 20 |
| Ormoc | 65.2 | —262.8 | 13 | — 5 | 15.1 | 18 | Dagupan | 583.2 | + 311.4 | 26 | + 9 | 131.2 | 13 |
| Guiuan | 51.1 | ------ | 7 | ------ | 25.4 | 12 | Baguio | 2,521.7 | +1,965 | 28 | + 2 | 337 | 25 |
| Tacloban | 39.2 | — 44.2 | 9 | — 3 | 10.7 | 31 | San Fernando, Union | 993.2 | + 616.4 | 26 | +10 | 183.1 | 1 |
| Capiz[2] | 113 | ------ | ---- | ------ | 41.6 | 27 | Echagüe[3] | 129.7 | ------ | ---- | ------ | 46 | 24 |
| Borongan | 39.3 | —110.6 | 7 | — 8 | 15.2 | 17 | Vigan | 1,782.8 | +1,145.1 | 25 | + 2 | 329.2 | 13 |
| Calbayog | 148.7 | — 79 | 11 | — 3 | 68.8 | 18 | Tuguegarao | 631.5 | + 464.6 | 16 | + 2 | 223.8 | 24 |
| Masbate | 96.1 | — 2.3 | 13 | — 2 | 55.6 | 18 | Laoag[3] | 1,161.9 | ------ | ---- | ------ | 153.5 | 1 |
| Romblon | 70.6 | — 55.2 | 16 | 0 | 17.8 | 1 | Aparri | 500.9 | + 373.6 | 20 | + 7 | 141.3 | 25 |
| Gubat | 58.7 | ------ | 5 | ------ | 49.5 | 25 | Sto. Domingo, Batanes Is. | 516.4 | — 166.4 | 21 | + 2 | 142.2 | 26 |
| Legaspi | 145.6 | — 38.3 | 15 | — 2 | 45.8 | 21 | | | | | | | |

[1] 27 days of observation. [2] 28 days of observation. [3] 30 days of observation.

## DEPRESSIONS AND TYPHOONS.

As regards the number of typhoons which raged in the Far East, the month of August has been a worthy successor to July, 1911. No less than ten depressions or typhoons appeared in these seas, although only two struck our Archipelago. Of these, one crossed the Babuyanes Islands during the forenoon of August 1, the other traversed the Batanes group on the 26th. The last typhoon of the month did not reach the meridian of Manila until the early hours of September 1, wherefore we reserve its discussion for the Bulletin corresponding to the latter month.

### THE TYPHOON OF JULY 25 TO AUGUST 6, 1911.

The observations of Yap, as well as those of Guam, made on July 25 and 26 clearly indicated the existence of a cyclonic center over the Western Carolines, some 250 to 300 miles to the east of Yap. Although Manila Observatory might then and there have announced this disturbance, still, in view of the state of excitement into which people had been thrown by reason of the continual announcements of new storms ever since the beginning of July, it was considered prudent to say nothing of it, until it should become clear that it would influence the Philippines to a greater or less extent.

In the afternoon of July 30 the Observatory finally issued a statement that there was a depression far to the east of Luzon, which appeared to involve no danger for the Islands, as it moved apparently on a northwesterly course, with the probability of inclining still more toward north. This expectation failed, however, to be realized; instead of turning toward north, or at least continuing to advance toward northwest, the storm moved toward west-northwest during the 31st, and almost due west during August 1 and 2, as the reader may see from the storm track given on Plate IX. Hence it came to pass that the center passed rather close to the Provinces of Cagayan and Ilocos Norte, across the Babuyanes Islands. At Aparri, the barometric minimum of 739.2 millimeters was observed at 8 a. m. of August 1, at Laoag one of 743.12 at 3 p. m. of the same day. A minimum of 743.4 millimeters, almost identical with that at Laoag, was recorded on board the steamer *Rubi* at 10 p. m. of the 2d, the ship being then in latitude 19° north and longitude 116.5° east, en route from Hongkong to Manila. This proves that until the night of August 2, the storm moved almost exactly westward, its northerly inclination being very slight.

During the night of August 2 to 3 the typhoon gradually inclined again toward north, moving approximately toward north-northwest from the night of the 3d until the night of the 5th. This accounts for the fact that the storm's influence was of so long duration and considerable intensity at Hongkong, and still more so at Macao, where the barometer fell as low as 737.3 millimeters with hurricane winds from southeast, in the afternoon of the 5th.

We subjoin the typhoon warnings which on the occasion of this typhoon Manila Observatory sent to its foreign correspondents and those received by it from Hongkong Observatory:

**Manila:**

July 31, 8.47 a. m.: Typhoon east of northern Luzon, more than 300 miles distant, moving northwest or north-northwest.

July 31, 10.40 a. m.: Typhoon east of northern Luzon, more than 300 miles distant, moving northwest.

July 31, 6 p. m.: Typhoon east of northern Luzon, less than 300 miles distant, moving northwest.

August 1, 9.45 a. m.: Typhoon west-northwest of Aparri, moving west or west-northwest.

August 2, 8.30 a. m.: Typhoon west of Balintang Channel, moving west-northwest.

**Hongkong:**

July 31, noon: Typhoon northeast of Luzon, direction of motion unknown.

August 1, 11 a. m.: Typhoon near the Balintang Channel, moving west-northwest.

August 2, 11 a. m.: Typhoon west of Balintang Channel, moving west-northwest.

August 3, 11 a. m.: Typhoon south of Hongkong, moving west-northwest.

August 4, 12.30 p. m.: Typhoon south-southwest of Hongkong, moving northwest.

August 4, 5.30 p. m.: Typhoon south-southwest of Hongkong, moving north.

August 5, 11 a. m.: Typhoon southwest of Hongkong, moving northwest.

After August 2 it was not deemed necessary to cable further notices from Manila, but the Observatory followed the course of the storm in the daily weather notes of the next four days as follows:

August 3, 11.30 a. m.: The typhoon continues moving to west-northwest or WbyN, its center being situated this morning south of Hongkong.

August 4, 11.30 a. m.: The typhoon of the China Sea is situated this morning southwest of Hongkong and continues moving very slowly to west-northwest.

August 5, 11.20 a. m.: The typhoon of the China Sea has been inclining northward since yesterday morning, its center being situated to-day southwest or west-southwest of Hongkong, at a probable distance from the British colony of less than 100 miles. It is moving apparently at present to northwest or NWbyN.

August 6, 11.30 a. m.: The typhoon entered the Continent yesterday to the west of Hongkong and continues moving northwestward.

Advices received from Hongkong state that there the rains have been very abundant during the passage of this typhoon, as they had been likewise in northern and western Luzon. The observer in charge of the station at Vigan, Ilocos Sur, reports as follows on these rains and the resulting inundation:

"Owing to the torrential rain of last night and this whole day (Aug. 1), the Abra River is causing a heavy flood, which I believe to be the greatest that I have witnessed since my arrival at this station (1907)."

The following amounts of rain, expressed in millimeters, have been recorded at the Weather Bureau stations situated in northern and western Luzon, from July 30 to August 2: Aparri, 273.2; Tuguegarao, 216.8; Laoag, 307.0; Vigan, 545.7; Candon, 604.5; San Fernando, Union, 257.3; Baguio, 511.6; Iba, 158.7; Manila, 61.6.

We close the description of this typhoon by adding the notices by means of which Zikawei Observatory announced it to the stations along the China coast:

July 27, 10 a. m.: Typhoon Yap north to east within 210 miles, direction northwest.

July 28, 10 a. m.: Typhoon Yap north to west, direction west-northwest or NWbyW.

July 29, 3 p. m.: Typhoon far east of the Philippines, direction west-northwest or WbyN.

July 31, 8.30 a. m.: Typhoon east of Luzon, direction northwest.

July 31, noon: Typhoon northeast of Luzon, direction northwest.

July 31, 9 p. m.: Typhoon east of Balintang Channel, direction northwest.

August 1, 10 a. m.: Typhoon Balintang Channel, direction west-northwest or NWbyW.

August 1, noon: Typhoon northwest of Luzon, direction west-northwest or NWbyW.

August 1, 4.20 p. m.: Typhoon Pratas south of Formosa Channel, direction northwest.

August 2, 9 p. m.: Typhoon southeast of Hongkong beyond 120 miles, direction west-northwest or NWbyW.

August 3, 9 p. m.: Typhoon southeast of Hongkong within 120 miles, direction northwest.

August 5, 2.30 p. m.: Typhoon coast near Macao, recurving.

### THREE TYPHOONS OF THE MARIANAS AND JAPAN, JULY 29 TO AUGUST 22, 1911.

A few words will suffice concerning each of these disturbances, especially since, owing to their great distances from the Archipelago, they either failed entirely to influence the weather in the Philippines, or at the most affected it very slightly.

**The typhoon of July 29 to August 5.**—From the afternoon of July 29 until the 31st, the observations of Guam gave indications of a depression or typhoon in the neighborhood of the northern islands of the Ladrone or Mariana group. On August 1, especially in the afternoon, the observations of the Bonin Islands revealed it to the south of the latter group, near latitude 20° north. According to our weather maps for the next three days, the center of this storm may be located to the southwest of the Bonins at 2 p. m. of the 2d; west of the Bonins at 2 p. m. of the 3d; close to the south of Japan at 2 p. m. of the 4th; and in the north of Nippon Island at 2 p. m. of the 5th.

**The typhoon of August 10 to 16.**—A new, somewhat pronounced falling of the barometer at Guam on the 10th, together with winds from southwest, pointed to the presence of a new typhoon between meridians 145° and 147° east, and parallels 16° and 19° north. This typhoon, like the preceding, recurved toward Japan after having, however, approached much closer to the Loochoos Islands than the former. In fact, in the afternoon of the 14th its center lay east of and very close to the northern part of that group of islands, whence it began to move toward Japan, in an approximately northeastern direction.

**The typhoon of August 14 to 22.**—The typhoon which we have just mentioned had not yet reached Japan, when the observations made at Guam in the afternoon of the 14th and the morning of the 15th indicated a new cyclonic center east of, and not far from, the Mariana Islands. But, as in the afternoon of the 15th a further disturbance—to be discussed later on—appeared south of Guam, the observations of the said station ceased to show thereafter any influence of the former, which was at a greater distance and moved with a strongly northern inclination. According to the observations of the Bonin Islands and Japan, this second typhoon, after advancing in a northwesterly direction during three or four days, recurved toward northeast on the 19th, when the vortex was some 300 miles east of the northern part of the Loochoos.

### THE TYPHOON OF AUGUST 7 TO 15, 1911.

The weather maps for August 7, especially that for the afternoon, left no room for doubting the existence of a typhoon west of the Mariana Islands which, to judge from the observations of Guam and Yap, may have been forming and developing to the northwest of Guam ever since the 2d. At 2 p. m. of the 8th the center could be located nearly midway between the Marianas and Loochoos, in the vicinity of 20° latitude north and 135° longitude east. This typhoon proved to be of vast dimensions, since its influence was felt from the Marianas to the Loochoos and Formosa, and from the Philippines to the Bonin Islands. Until the 8th inclusive, it moved northwestward, and on the 9th and during the night of August 9 to 10 even toward NWbyN; but in the early morning of the latter day it inclined extraordinarily to westward, traveling thenceforth to WbyN, until it entered the continent between meridians 121° and 122° east and parallels 28° and 29° north during the early morning of the 11th. Thereafter the storm changed its direction again to northwest, and finally recurved to northeast on the 12th. During the 14th it traversed Manchuria in the direction east-northeast.

### THREE OTHER DEPRESSIONS OR TYPHOONS, AUGUST 10 TO 24, 1911.

**The depression or typhoon of August 10 to 14.**—The preceding typhoon (August 7 to 15) was still in the Eastern Sea and in China, to the southwest of Shanghai, when our weather maps for the afternoon of the 10th and especially those for the 11th, showed clearly that a cyclonic center had remained east of southern Formosa, or rather of the Bashi Channel and not far from it. On the 12th this center could still be well recognized, but appeared to have remained stationary and to have a tendency to fill up. The following day hardly more than a low-pressure area could be distinguished which stretched from the China Sea across northern Luzon and the Bashi and Balintang Channels to the Pacific Ocean. On the 14th, a depression could still be made out in the northeastern part of the China Sea which had, however, completely disappeared on the following day. From these remarks the reader will understand the reason why the track of this depression does not appear on Plate IX.

**The depression or typhoon of August 15 to 19.**—For the track of this disturbance which is shown on Plate IX, we cannot claim more than a fair degree of probability, especially as regards the first portion of it, that is to say, for August 15 and 16. The winds observed at Guam and Yap in the afternoon of the 15th and the morning of the 16th seem to indicate it lying east of Yap and south of Guam; and, according to all appearances, the vortex passed north of Yap during the night of the 16th to 17th, moving toward NWbyW. But we encounter the difficulty that the barometric minimum occurred at Yap as late as the 18th! This can be explained only by assuming that the depression extended its isobars more and more as it receded from Yap and approached Luzon. It seems that this depression filled up on the 19th while to the northeast of Luzon.

**The depression of typhoon of August 21 to 24.**—This depression which almost deserves to be called a typhoon, formed on the 21st to 22d in the vicinity of the Paracels Islands and, moving westward, entered Annam near Tourane during the night of the 23d. We reproduce the typhoon notices concerning this disturbance which were exchanged between Manila and Hongkong, as well as those which Zikawei issued to the stations on the China coast.

**Manila:**

August 23, 11.15 a. m.: Depression northern part China Sea, advancing westward.

**Hongkong:**

August 23, 12.25 p. m.: Typhoon east of Paracels, direction of motion unknown.
August 24, 12.30 p. m.: Typhoon in Annam, moving west.

**Zikawei:**

August 23, 8.45 a. m.: Typhoon south of Macclesfield Bank, direction unknown.
August 23, noon: Typhoon south of Macclesfield Bank, direction northwest.
August 23, 9 p. m.: Typhoon off Annam, direction northwest.

In the weather notes for the 23d and 24th, published in the daily papers of the capital, Manila Observatory specified the position and path of this typhoon more clearly as follows:

August 23, 11.45 a. m.: There are signs of another depression over the China Sea in the neighborhood of the Paracels, moving westward.

August 24, 11.50 a. m.: The depression or typhoon of the China Sea has moved westward and entered the central part of Indo-China near Tourane.

## THE TYPHOON OF THE BATANES ISLANDS AND SOUTHERN FORMOSA, AUGUST 21 TO 25, 1911.

Though the typhoons which visited the Philippine Islands during the present year have excited a great deal of comment, very little has been heard concerning the worst of them all, one which fully deserves to be classed with the few typhoons which from time to time cross the Archipelago leaving in their wake a sad trail of ruins and desolation. We are speaking of the typhoon which burst over the Batanes Islands and southern Formosa on August 26. The reason why it was hardly mentioned in Manila lies in the fact that the Batanes are without telegraphic communication and that, consequently, the news of the catastrophe reached the capital only a month after the occurrence.

The observer in charge of the meteorological station at Santo Domingo, Batan Island, avers that the oldest people of the town declare, never in their lives to have witnessed a storm of equal fury. The Director of Taihoku Observatory, Formosa, likewise informs us by letter that the chief of the station at Koshun, southern Formosa, reported this typhoon as very much fiercer than the one of August 29 of the preceding year. But in the discussion of the latter in the BULLETIN for August, 1910, the following remark is found regarding the wind velocity developed by this storm while it passed over Koshun: "So great a velocity (56.8 meters per second) had not been observed since the establishment of the station."

The Director of Taihoku Meteorological Observatory, Mr. Kondo, has kindly placed at our disposal isobars, barograph curves, and most valuable observations which serve admirably to confirm the course which we had supposed that the storm followed in crossing the southwestern coast district and the Channel of Formosa during the night of the 26th and the forenoon of the 27th. We gladly make use of this opportunity to express our sincerest appreciation of the promptness and generosity wherewith Mr. Kondo furnished us with these important data.

**Origin of the storm.**—In all probability this typhoon formed on August 21 to the west of the southern islands of the Ladrone or Mariana group; at least such is indicated by the observations made at Guam and Yap, which we present in the following table:

METEOROLOGICAL OBSERVATIONS FOR AUGUST 21 TO 23, 1911.

| Yap, Western Carolines. | | | | | |
|---|---|---|---|---|---|
| Date and hour. | Pressure. | Wind. | | Weather. | Rainfall (daily total.) |
| | | Direction. | Force. | | |
| August 21: | *mm.* | | *0-12.* | | *mm.* |
| 6 a. m | 756.05 | Calm | ------ | o, d | ------ |
| 2 p. m | 54.90 | WSW | 1 | o, d | 14.7 |
| August 22: | | | | | |
| 4 a. m | 53.07 | WNW | 4 | o | ------ |
| 6 a. m | 53.34 | W | 2 | o | ------ |
| 10 a. m | 53.94 | WSW | 5 | o, p | ------ |
| 2 p. m | 51.87 | SW | 2 | o, q | ------ |
| 3 p. m | 51.35 | SW | 3 | o | ------ |
| 4 p. m | 51.53 | WSW | 4 | o, r | ------ |
| 6 p. m | 52.11 | SW | 4 | o | 32 |
| August 23: | | | | | |
| 6 a. m | 52.38 | SW | 4 | o, q | ------ |
| 2 p. m | 52.38 | SSW | 4 | o, r | 12 |

| Sumay, Guam, Ladrone Islands. | | | | |
|---|---|---|---|---|
| Date and hour. | Pressure. | Wind. | | Rainfall (daily total). |
| | | Direction. | Force. | |
| August 21: | *mm.* | | *0-12* | *mm.* |
| Noon | 752.27 | SSE | 2 | ------ |
| 2 p. m | 51.22 | SW | 2 | ------ |
| 5 p. m | 51.80 | S | 4 | ------ |
| 7.30 p. m | 53.10 | SSE | 3 | 38.1 |
| August 22: | | | | |
| 6 a. m | 53.22 | S | 2 | ------ |
| 10 a. m | 54.37 | S | 3 | ------ |
| 11 a. m | 54.22 | SSW | 4 | ------ |
| Noon | 53.95 | S | 3 | ------ |
| 1 p. m | 53.62 | SSW | 3 | ------ |
| 2 p. m | 53.50 | SSW | 3 | ------ |
| 4 p. m | 53.52 | SE | 3 | ------ |
| 6 p. m | 54.12 | SE | 1 | 38.1 |

On the 21st, that is five days before the storm burst with full fury over the Batanes Islands, Manila Observatory issued the first warning regarding this typhoon to the other Meteorological Centers of the Far East in the following dispatch:

August 21, 7.10 p. m.: Typhoon west of the Ladrone or Mariana Islands; direction unknown.

On the following day we could already announce the direction in which the center then advanced, by means of the following cablegram:

August 22, 10.30 a. m.: Typhoon west of the Ladrone or Mariana Islands; moving west or west-northwest.

August 22, 5.35 p. m.: Typhoon west of the Ladrone or Mariana Islands; moving west.

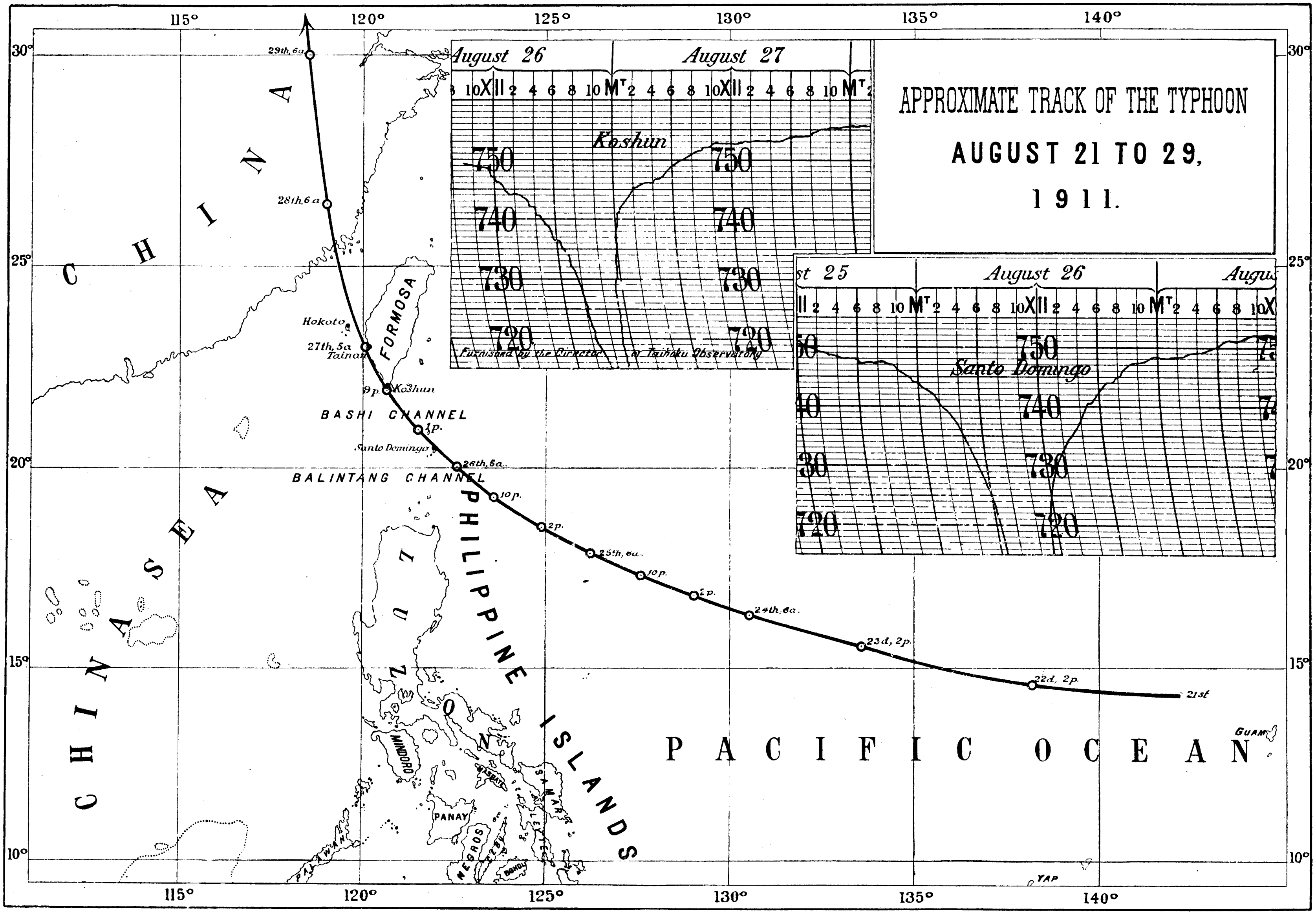
**The typhoon in the Batanes Islands.**—On the 23d it became evident that the typhoon in question was of vast extension and probably also of great intensity, because despite the fact that the vortex was still more than 500 miles from the easternmost shores of the Philippines, its influence became already apparent in both the movements of the barometers and the direction of the atmospheric currents. Thus the Observatory was enabled to telegraph on the same day its first caution to several of its stations in the Archipelago, the same information being sent likewise to the observatories of Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

August 23, 9.35 a. m.: Typhoon over the Pacific Ocean, about halfway between the Mariana Islands and Luzon; moving west.

On the 24th the influence of the storm on the entire Archipelago was so clear that the observer at Santo Domingo, though dependent exclusively on his own observations and sagacity, could inform the provincial and municipal authorities that there was "a typhoon toward the southeast quadrant, which is approaching this place." In the forenoon of the 25th the observer reiterated his prediction, telling the officials that the typhoon was "by and by getting nearer;" and at 10 p. m. of the same day he "sent word to the municipal president that he should order the councilors that at the earliest hour of the following morning each of them be at his post with his men, in order to save the public buildings," an advice which was carried out at 4 a. m. of the 26th.

In the following table we publish the observations made at the station of Santo Domingo, and on Plate X a facsimile of the barograph curve obtained there on this occasion. It is most unfortunate that we shall never know the lowest point reached by the barometer while the storm passed over Santo Domingo. As is seen in the reproduction, the

Plate X.



APPROXIMATE TRACK OF THE TYPHOON

AUGUST 21 TO 29,

1911.

Furnished by the Director of Taihoku Observatory recording pen reached the lower limit of the paper (715 millimeters) about two hours before the vortex passed. On the other hand, the observer was at that critical time in dire straits, endeavoring to save the instruments and other delicate belongings of the station from utter ruin, finding it thus impossible to make direct observations while the vortex was in the immediate neighborhood. Even those observations which he had made during the hours preceding the worst phase of the phenomenon he lost to his great chagrin in the confusion, and had to substitute for them the readings of the barographic curve.

METEOROLOGICAL OBSERVATIONS AT SANTO DOMINGO, BATANES ISLANDS, AUGUST 26 AND 27, 1911.

| Date and hour. | Pressure. | Wind. |  | Weather. | Rainfall (daily total). | Remarks. |
|---|---|---|---|---|---|---|
|  |  | Direction. | Force. |  |  |  |
| August 26: | *mm.* |  | *0-12* |  | *mm.* |  |
| 1 a. m | 742.5 | NNE | 5 | o, r | ------- | Rain squalls: fresh to strong breeze from NNE to N. |
| 2 a. m | 40.6 | NNE to N | 5 | o, r | ------- | Rainy with fresh breeze to moderate gale at times; at 2.30. a. m. winds backing to N, force 6 to 7, and heavy rain. |
| 3 a. m | 38.7 | NNE to N | 6 | o, q, r | ------- | Rain squalls. |
| 4 a. m | 35.6 | NNE to N | 6 | o, q, r | ------- | Rain with strong breeze to moderate gale. |
| 5 a. m | 31.5 | NNE to N | 5 | o, q, r | ------- | As the preceding hour. |
| 6 a. m | 25 | N to NNW | 7 | o, q, r | ------- | Winds of force 7 to 9 backing to NNW with blinding rain. |
| 7 a. m | Below 715 mm. | NNW | 9 | o, q, r | ------- | Winds of force 9 to 11 and torrential rain. |
| 7.30 a. m |  | NNW | 11 | o, q | ------- | Stormy winds. |
| 8 a. m |  | NNW to NW | 6 | o | ------- | Winds abating and backing to NW: rain ceased. |
| 8.20 a. m |  | NW | 4 | o | ------- | Sky clearing up and sun shining. Ci.-S. can be seen overhead. |
| 8.30 a. m |  | NW | 4 | o | ------- | Somewhat gusty wind. |
| 9 a. m |  | WSW | 9 | o, q | ------- | A heavy squall covered with nimbus the whole sky and wind shifted suddenly from NW to WSW through W. |
| 9.30 a. m |  | WSW | 12 | o, q, r | ------- | Hurricane wind and torrential rain. |
| 10 a. m |  | WSW | 12 | o, q, r | ------- | Hurricane wind and torrential rain: vivid lightning in the locality, wind backing to SW. |
| 10.30 a. m |  | SW | 11 | o | ------- | Winds of force 11 to 12 at short intervals. |
| 11.20 a. m |  | SSW | 11 | o, q, r | ------- | Stormy winds with abundant rain. |
| Noon. | 24.5 | SSW | 10 | o, q, r | ------- | Weather clearing up a little; rain squalls at intervals |
| 1 p. m | 29 | SSW | 9 | o, q, r | ------- | Strong to whole gale at intervals with rain. |
| 2 p. m | 33 | SSW | 7 | o, d | ------- | Moderate to strong gale with drizzle; at 2.20 p. m. clearing up to the SE and NW quadrants. |
| 3 p. m | 35.3 | SSW | 7 | o, r | ------- | Moderate gale and continuous rain, weather improving. |
| 4 p. m | 37.7 | SSW | 6 | o, d | ------- | Strong breeze and drizzle; weather improving on. |
| 6 p. m | 42.4 | SSW | 5 | o, r | 142.2 | Fresh breeze, rain and drizzle at times. |
| August 27: |  |  |  |  |  |  |
| 6 a. m | 50.3 | SSW | 5 | o | ------- | Fresh breeze. |
| 10 a. m | 52 | SSW | 4 | o | ------- | Veil of A.-S. overhead. |
| 2 p. m | 52.3 | SSW | 4 | o | ------- | Moderate breeze at intervals. |
| 6 p. m | 53.1 | SSW | 5 | o | ------- |  |
| 10 p. m | 54.7 | SSW | 4 | o | ------- |  |

Our inability to ascertain the barometric minimum during this typhoon is so much the more to be regretted, as we believe that it would have proved to be one of the lowest, if not actually the lowest, ever observed in the Philippines. To this conclusion we are led by the barograph curve which shows 715 millimeters some two hours before the minimum, and still more by a comparison of same with that traced at Koshun, southern Formosa, which we reproduce on the same Plate X. It is evident at first sight that according to these curves the minimum must have been considerably lower at Santo

Domingo than at Koshun. But for the latter place, where direct hourly observations have been made, we find a minimum of 702.9 millimeters! Moreover, if already prior to the barometer's reaching 715 millimeters (from 6 to 7 a. m.) the descent attained a rate of more than 10 millimeters per hour, as may be seen in the curve, we do not believe that we are exaggerating matters if we suppose that during the two hours immediately preceding the minimum, the barometer fell as much as 12 to 15 millimeters per hour and, hence, that the minimum was 690 millimeters and possibly still lower. The observer of Santo Domingo remarks very well in his report: "I believe that, if the two branches of descent and ascent of the barograph were prolonged, we would have a minimum below 690 millimeters." Now, so low a minimum can be compared only with the one recorded on board the survey steamer *Pathfinder* during the ill-famed "Cantabria cyclone," which was 690.12 millimeters and has hitherto rightly been considered as the lowest pressure ever observed in the Philippines.[1]

In view of these facts nobody will be surprised at the ruin wrought and losses caused by this storm, though Santo Domingo is a relatively small town which counts probably not more than 2,500 souls. A copy of the report rendered by the acting municipal president of the place, Mr. Claudio Blacer, which I have before me, gives the following official statistics of the destructive effects of this typhoon:

| | |
|---|---|
| Houses ruined | 79 |
| Houses severely damaged | 78 |
| Houses slightly damaged | 366 |
| Cattle killed | 28 |
| Smaller animals killed | 62 |
| Small boats lost or smashed | 30 |

The provincial and township buildings, the public school, convento, and church have suffered severely; of the latter nothing remains standing but the bare walls.

One-third of the houses which have been wrecked was of strong materials.

It is estimated that the total loss sustained will not be less than ₱50,000.

We subjoin the typhoon warnings issued by Manila Observatory on the 24th to 26th:

August 24, 9 a. m.: Typhoon east of Luzon, more than 300 miles distant, moving west.

August 25, 10 a. m.: Typhoon east of northern Luzon, less than 300 miles distant, moving west-northwest.

August 26, 8.30 a. m.: Typhoon near or over Balintang Channel, moving west-northwest.

August 26, 4 p. m.: Typhoon near or over Bashi Channel, moving west-northwest or northwest.

That the typhoon must have been extraordinarily severe in the Batanes Islands was stated by the Weather Bureau in the following note published in the Manila papers of the 28th:

> This typhoon has been moving since Saturday night to north-northwest and must have been felt very severely in the group of Batanes Islands last Saturday morning.

The news which was received almost a month later fully bore out this statement.

**The storm in southern Formosa.**—In the following table we have united part of the observations made at Koshun, Tainan, and Hokoto and, as stated in the beginning, sent us by the director of the Central Observatory at Taihoku. From these data, together with the storm track across the Formosa Channel (Plate XI) the reader may judge the degree of accuracy of the statement made by the Weather Bureau in the daily weather note of the 27th: "The typhoon has been inclining more to the north, its center being situated this morning over the Formosa Channel, near the western coast of Formosa, moving apparently north-northwest." The center actually passed on a north-northwest course to the southwest of and very close to Koshun and Tainan.

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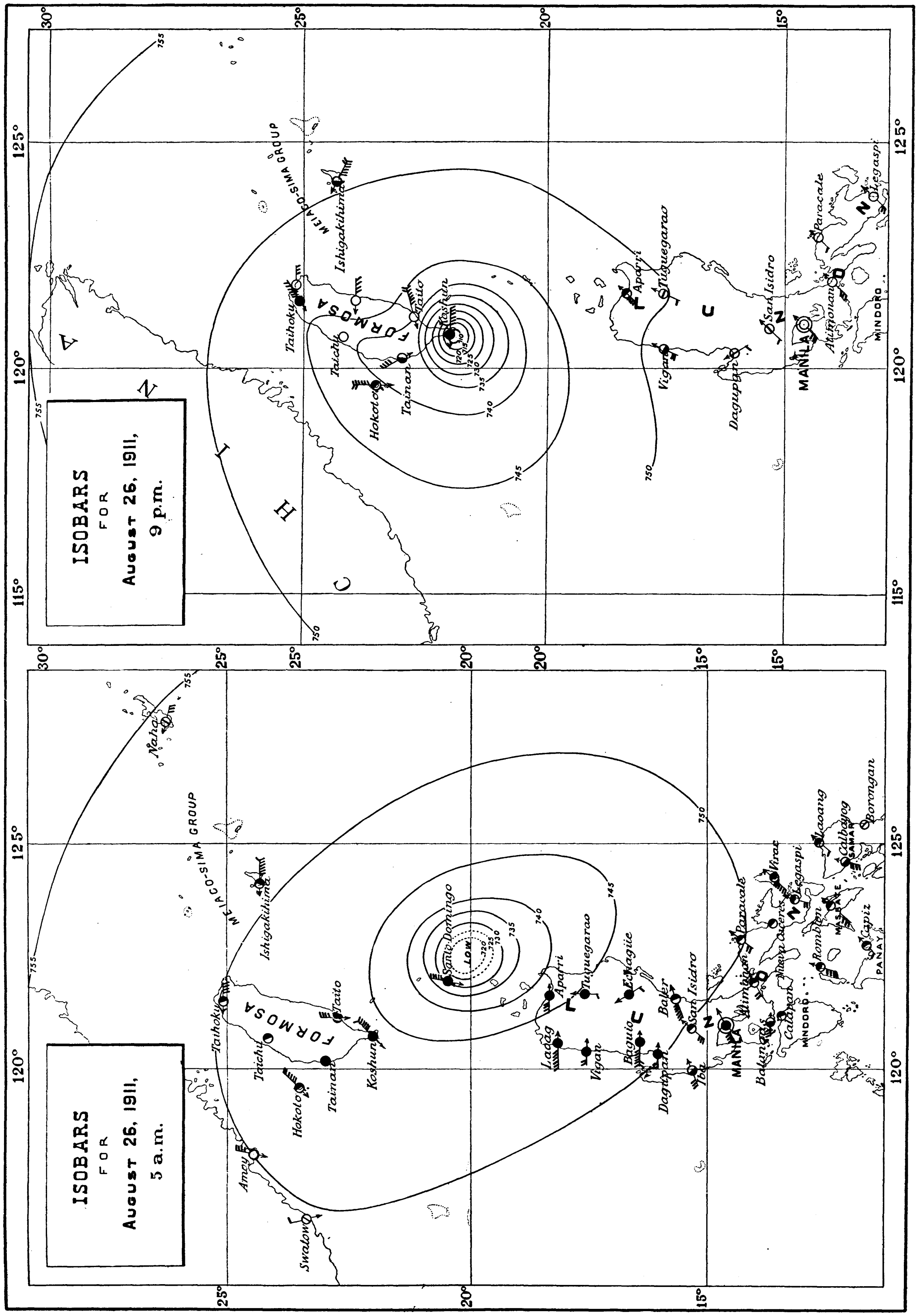
[1] See "The Cantabria Cyclone, September 22–28, 1905." By Rev. Miguel Saderra Mata, S. J., Assistant Director of the Weather Bureau.

*Plate XI.*



*N.B.—The barometric readings have been reduced to standard gravity.*

METEOROLOGICAL OBSERVATIONS MADE IN SOUTHERN FORMOSA AND ON THE PESCADORES, AUGUST 26 AND 27, 1911.

| Koshun. | | | | | Tainan. | | | | | Hokoto. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date and hour. | Pressure.[a] | Wind. | | Rainfall. | Date and hour. | Pressure.[a] | Wind. | | Rainfall. | Date and hour. | Pressure.[a] | Wind. | | Rainfall. |
| | | Direction. | Velocity. | | | | Direction. | Velocity. | | | | Direction. | Velocity. | |
| August 26: | *mm.* | | *m.p.s.* | *mm.* | August 26: | *mm.* | | *m.p.s.* | *mm.* | August 26: | *mm.* | | *m.p.s.* | *mm.* |
| 1 a. m | 748.7 | NE | 8.5 | 1.9 | 2 p. m | 743 | NW | 1.8 | 0.2 | Noon | 744.5 | NNE | 15.2 | ------- |
| 4 a. m | 46.3 | NNE | 11.5 | 8.9 | 4 p. m | 42.1 | NNW | 4 | ------- | 2 p. m | 43.7 | NNE | 13.1 | ------- |
| 6 a. m | 45.2 | NE | 14.3 | .2 | 6 p. m | 41.8 | N | 2.7 | 1.7 | 4 p. m | 42.2 | N | 17.6 | ------- |
| 8 a. m | 45.6 | NNE | 15.8 | 12.3 | 8 p. m | 39.3 | NNW | 5.8 | 1.7 | 6 p. m | 41.3 | N | 19 | ------- |
| 10 a. m | 44.1 | N | 15 | 21.8 | 10 p. m | 38 | N | 7.7 | ------- | 8 p. m | 41.3 | N | 19 | ------- |
| Noon | 42.5 | NNE | 16.8 | 24.7 | Midnight | 35.2 | NNW | 8.7 | ------- | 10 p. m | 39.7 | N | 19.7 | ------- |
| 2 p. m | 39.1 | NNE | 22.5 | 42.3 | August 27: | | | | | Midnight | 38.1 | N | 20.7 | ------- |
| 4 p. m | 36.1 | NE | (?) | 54.6 | 2 a. m | 33 | N | 13.1 | .2 | August 27: | | | | |
| 6 p. m | 31.2 | NE | 28.6 | 48 | 3 a. m | 35.5 | NE | 14.4 | 18.1 | 2 a. m | 36.7 | N | 23.5 | ------- |
| 7 p. m | 28.9 | NE | 33.1 | 28 | 4 a. m | 30.8 | E | 27.2 | 12 | 3 a. m | 35.7 | N | 22.2 | ------- |
| 8 p. m | 22.3 | NE | (?) | ------- | 4 30 a. m | 27 | SE | 42.8 | ------- | 4 a. m | 36.2 | N | 18.1 | ------- |
| 9 p. m | 07.1 | E | (?) | 28 | 4.45 a. m | 26.8 | SSE | 54.5 | ------- | 6 a. m | 38.4 | ENE | 5.5 | 0.1 |
| 10 p. m | 02.9 | E | 11.3 | 14.7 | 5 a. m | 27 | S | 47.2 | 8 | 7 a. m | 39.1 | N | 4.7 | .6 |
| 11 p. m | 07.2 | S | 12.2 | ------- | 5 30 a. m | 31.6 | S | 49.2 | ------- | 8 a. m | 38 | N | 15.8 | 8 |
| Midnight | 31.9? | S | (?) | ------- | 6 a. m | 34.9 | S | 29.5 | 74.1 | 9 a. m | 37.1 | NW | 23.1 | 10.7 |
| August 27 | | | | | 7 a. m | 39.2 | S | 25.2 | 37 | 10 a. m | 39.3 | W | 21.9 | 7.5 |
| 4 a. m | 42.8 | SSW | 13.4 | 94.8 | 8 a. m | 41.2 | S | 14.8 | 2.3 | Noon | 41.8 | WSW | 13 | 5.9 |
| 6 a. m | 45.8 | SSW | 17.4 | 36.5 | 10 a. m | 43.1 | SW | 12.5 | 5.4 | 2 p. m | 42.9 | SW | 7.9 | ------- |
| 8 a. m | 48 | S | 12.6 | 24 | Noon | 44.7 | SSW | 15.7 | 8.9 | 4 p. m | 44.1 | WSW | 12.9 | .4 |
| Noon | 49.5 | SW | 9.7 | 26.4 | 2 p. m | 45.8 | SSW | 16.9 | 51.2 | 6 p. m | 44.7 | SSW | 13 | 30.4 |

[a] The barometric readings are reduced to standard gravity.

On the right of Plate XI are shown the isobars for 9 p. m. of the 26th and on Plate X the barograph curve traced at Koshun. Regarding the latter, we beg to advert that a comparison of same with the direct observations of the same station seems to indicate that the readings of the curve require a correction of approximately —5 millimeters before the minimum, and of about —3 millimeters after the same.

The chief of the meteorological station at Koshun describes the great fury of this typhoon in the following terms:

> This typhoon was far more intense than the one of August 29 of last year. There is no house which is not entirely or at least partly destroyed. Unfortunately, the maximum velocity of the wind could not be observed, as the anemometer cups were blown away; but it probably exceeded 70 meters per second.

The Director of Taihoku Observatory informs us that official statistics give the losses caused by this storm in Formosa as follows:

| | |
|---|---|
| Persons killed | 197 |
| Persons injured | 122 |
| Houses totally wrecked | 13,624 |
| Houses partly wrecked | 19,416 |

**Further course of the typhoon.**—During the forenoon of the 27th Manila Observatory sent the following information to its correspondents:

> August 27, 9 a. m.: Typhoon near or over the Formosa Channel; moving north-northwest.

The further progress of the storm was indicated the following days in the daily weather notes in these terms:

> August 28, 11.50 a. m.: The typhoon entered the Continent yesterday afternoon and is situated this morning over China, to the southwest of Shanghai. It has been moving since Saturday night to north-northwest.
>
> August 29, 11 a. m.: The typhoon of last week has continued moving to north-northwest and is situated this morning over China, west of Shanghai.

A comparison of the observations made at Koshun with those of Tainan, Hokoto, and some stations on the China coast, leads to the conclusion that the storm lost much of its intensity and depth soon after it had passed Koshun. This would explain how it came to pass that at Hokoto the barometric minimum was observed hours before the vortex arrived at its least distance from the station, and likewise some other facts which would constitute perplexing anomalies were we to suppose that, while crossing the Formosa Channel and moving over the continent, the typhoon retained the same form which it had when over southern Formosa.

**Typhoon warnings issued by Hongkong and Zikawei Observatories.**—We close the discussion of this typhoon by reproducing the typhoon warnings which we received from Hongkong Observatory in connection with the same and likewise those which Zikawei sent to the stations on the China coast.

**Hongkong:**

August 24, 12.30 p. m.: Typhoon east of Luzon, moving west.
August 25, 10.55 a. m.: Typhoon northeast of Luzon, moving west-northwest.
August 26, 10.20 a. m.: Typhoon near Balintang Channel, moving northwest.
August 26, 5.45 p. m.: Typhoon near Bashi Channel, moving northwest.
August 27, 10.40 a. m.: Typhoon in middle part of Formosa Channel, moving north.

**Zikawei:**

August 21, 9.30 a. m.: Typhoon southwest of Guam, moving west-northwest.
August 22, 9.35 a. m.: Typhoon N to E of Yap, moving northwest or west-northwest.
August 23, 4.15 p. m.: Typhoon N to W of Yap, moving west-northwest.
August 24, 10.15 a. m.: Typhoon far east from the Philippines, moving northwest.
August 24, 9 p. m.: Typhoon east of Luzon, moving northwest.
August 25, 9.45 a. m.: Typhoon northeast of Luzon, moving northwest.
August 26, 9.45 a. m.: Typhoon east of Balintang Channel, moving northwest.
August 26, 4.15 p. m.: Typhoon southeast of Formosa, moving northwest.
August 26, 9 p. m.: Typhoon over the Bashi Channel, moving northwest.
August 27, 8.15 a. m.: Typhoon, center of Formosa, moving northwest.
August 27, 2.20 p. m.: Typhoon, center of Formosa Channel, moving northwest or north-northwest.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes es también como la de Julio inferior á la del año próximo pasado. Las diferencias más notables corresponden al norte de Luzón, debido á su mayor proximidad á las depresiones y tifones de que hablaremos luego. La media mensual de Manila se diferencia de la normal de este mes en —1.18 mm., y de la media de Agosto, 1910, en —1.01 mm.

Á excepción de unas cinco estaciones de Visayas y Mindanao, todas las demás dan una temperatura mensual algo menor que la de Agosto del año pasado. Los valores extremos para Manila fueron 32.7 °C y 22.1 °C, registrados respectivamente los días 11 y 21.

**Precipitación acuosa.**—Salvas raras excepciones, la lluvia total de este mes ha sido mayor que la de Agosto, 1910, en todas las estaciones del norte de Luzón desde Aparri hasta Manila inclusive; pero ha sido generalmente menor en el resto del Archipiélago. La cantidad de agua recogida en todo el mes en los pluviómetros del Observatorio Central difiere de la del año pasado en +144.8 mm., y de la normal de Agosto en +66.5 mm.

## DEPRESIONES Y TIFONES.

Este mes de Agosto ha sido digna continuación del pasado Julio por lo que toca al número de tifones que han desfogado en el Extremo Oriente. Diez son las depresiones ó tifones que se han presentado por estos mares, si bien solos dos han tocado nuestro Archipiélago. De estos el uno atravesó las Islas Babuyanes la mañana del día 1, y el otro, las Islas Batanes el día 26. El último tifón del mes no cruzó nuestro meridiano hasta las primeras horas del 1 de Septiembre, y así dejaremos su discusión para el Boletín de dicho mes.

### EL BAGUIO DE 25 DE JULIO Á 6 DE AGOSTO, 1911.

Durante los días 25 y 26 de Julio las observaciones tanto de Yap como de Guam indicaban claramente la existencia de un centro ciclónico en las Carolinas Occidentales hacia el E de Yap y á unas 250 ó 300 millas de distancia de aquella estación. Hay que hacer notar, sin embargo, que aun cuando el Observatorio de Manila hubiera podido anunciar desde entonces este tifón, con todo, en vista del estado de excitación en que se hallaban los ánimos con tantos tifones como se habían venido anunciando desde principios de Julio, se creyó más prudente no decir nada de éste hasta que se viese claro que había de influir más ó menos en Filipinas.

El día 30 por la tarde anunció ya el Observatorio la existencia de una depresión lejana al E de Luzón, si bien no parecía por entonces peligrosa para Filipinas por moverse aparentemente al NW con probabilidades de que se inclinase aún más al N. Sin embargo, no fué así, pues en vez de inclinarse más al norte ó seguir cuando menos su curso al NW, se movió el 31 al WNW, y el 1 y 2 de Agosto casi exactamente al W, según pueden ver nuestros lectores en la trayectoria de este tifón que damos en la lámina IX. De ahí que viniese á pasar el vórtice bastante cerca de las Provincias de Cagayán é Ilocos Norte á través de las Islas Babuyanes. En Aparri la mínima barométrica fué 739.2 mm., observada á 8 a. m. del 1 de Agosto. En Laoag la mínima fué 743.12 mm. y se observó á 3 p. m. del mismo día 1. Una mínima casi idéntica á la de Laoag, es decir, 743.4 mm., fué observada á bordo del vapor *Rubí*, en viaje de Hongkong á Manila, á 10 p. m. del día 2, cuando se hallaba este barco en los 19° Lat. N y 116.5° Long. E: esto confirma claramente que el baguio se movió hasta la noche del día 2 casi enteramente al W con una muy ligera inclinación al NW.

Durante la noche del 2 al 3 volvió este baguio á inclinarse gradualmente al N; de suerte que desde la noche del 3 hasta la noche del 5 se dirigió próximamente al NNW. Esto fué causa de que su influencia durase mucho tiempo y de una manera bastante notable en Hongkong y más aún en Macao donde se observó una lectura barométrica tan baja como 737.3 mm. con vientos huracanados del SE, la tarde del día 5.

Véanse á continuación los avisos de tifón que con motivo de este baguio trasmitió el Observatorio de Manila á sus corresponsales en el Extremo Oriente, y los que á su vez recibimos del Observatorio de Hongkong:

**Manila:**

Día 31 de Julio, 8.47 a. m.: Tifón al E de la parte norte de Luzón, distancia mayor de 300 millas, moviéndose al NW ó NNW.

Día 31 de Julio, 10.40 a. m.: Tifón al E de la parte norte de Luzón, distancia mayor de 300 millas, moviéndose al NW.

Día 31 de Julio, 6 p. m.: Tifón al E de la parte norte de Luzón, distancia menor de 300 millas, moviéndose al NW.

Día 1 de Agosto, 9.45 a. m.: Tifón al WNW de Aparri, moviéndose al W ó WNW.

Día 2, 8.30 a. m.: Tifón al W del canal de Balintang, moviéndose al WNW.

**Hongkong:**

Día 31 de Julio, mediodía: Tifón al NE de Luzón; dirección desconocida.
Día 1 de Agosto, 11 a. m.: Tifón cerca del canal de Balintang, moviéndose al WNW.
Día 2, 11 a. m.: Tifón al W del canal de Balintang, moviéndose al WNW.
Día 3, 11 a. m.: Tifón al S de Hongkong, moviéndose al WNW.
Día 4, 12.30 p. m.: Tifón al SSW de Hongkong, moviéndose al NW.
Día 4, 5.30 p. m.: Tifón al SSW de Hongkong, moviéndose al N.
Día 5, 11 a. m.: Tifón al SW de Hongkong, moviéndose al NW.

El Observatorio de Manila, aunque no creyó necesario trasmitir ningún otro aviso de tifón después del día 2, sin embargo, fué siguiendo el curso ulterior del baguio en las notas ordinarias del tiempo de los cuatro días siguientes en estos términos:

Día 3, 11.30 a. m.: El tifón continúa moviéndose al WNW ó W¼NW: su centro se halla esta mañana al S de Hongkong.

Día 4, 11.30 a. m.: El tifón del Mar de China está situado esta mañana al SW de Hongkong y continúa moviéndose muy lentamente al WNW.

Día 5, 11.20 a. m.: El tifón del Mar de China ha estado inclinándose hacia el N desde ayer mañana: su centro se halla hoy al SW ó WSW de Hongkong á una distancia de menos de 100 millas de la colonia Inglesa. Se mueve, aparentemente, al presente al NW ó NW¼N.

Día 6, 11.30 a. m.: El tifón penetró ayer en el Continente por el W de Hongkong y continúa moviéndose hacia el NW.

Según noticias recibidas de Hongkong, fueron allí muy abundantes las lluvias durante el paso de este baguio como lo habían sido también en el norte y oeste de Luzón. El observador de nuestra estación de Vigan dió cuenta de estas lluvias y de las inundaciones que produjeron con estas palabras:

> Por efecto de la lluvia torrencial de anoche y de todo este día (1 de Agosto) el río Abra se está desbordando mucho, y creo que es esta la mayor inundación que he visto aquí hasta el presente desde mi llegada á esta estación (1907).

La lluvia caída desde el 30 de Julio al 2 de Agosto en varias de nuestras estaciones del norte y oeste de Luzón es como sigue: Aparri, 273.2 mm.; Tuguegarao, 216.8 mm.; Laoag, 307.0 mm.; Vigan, 545.7 mm.; Candon, 604.5 mm.; San Fernando, Unión, 257.3 mm.; Baguio, 511.6 mm.; Iba, 158.7 mm.; Manila, 61.6 mm.

Terminaremos lo referente á este primer baguio de Agosto y último de Julio copiando los avisos de tifón con que lo anunció á las estaciones de la costa de China el Observatorio de Zikawei:

Día 27 de Julio, 10 a. m.: Tifón entre el N y E de Yap, á menos de 210 millas, dirección NW.
Día 28, 10 a. m.: Tifón entre el N y W de Yap, dirección WNW ó NW¼W.
Día 29, 3 p. m.: Tifón lejos al E de Filipinas, dirección WNW ó W¼NW.
Día 31, 8.30 a. m.: Tifón al E de Luzón, dirección NW.
Día 31, mediodía: Tifón al NE de Luzón, dirección NW.
Día 31, 9 p. m.: Tifón al E del canal de Balintang, dirección NW.
Día 1 de Agosto, 10 a. m.: Tifón en el canal de Balintang, dirección WNW ó NW¼W.
Día 1, mediodía: Tifón al NW de Luzón, dirección WNW ó NW¼W.
Día 1, 4.20 p. m.: Tifón en Pratas al S del canal de Formosa, dirección NW.
Día 2, 9 p. m.: Tifón al SE de Hongkong, á más de 120 millas, dirección WNW ó NW¼W.
Día 3, 9 p. m.: Tifón al SE de Hongkong, á menos de 120 millas, dirección NW.
Día 5, 2.30 p. m.: Tifón en la costa, cerca de Macao, recurvando.

## TRES TIFONES DE MARIANAS Y JAPÓN, 29 DE JULIO Á 22 DE AGOSTO, 1911.

Dos palabras bastarán sobre estos tres tifones, toda vez que por su gran distancia ó no influyeron absolutamente ó influyeron muy poco en el tiempo de Filipinas.

**Tifón de 29 de Julio á 5 de Agosto.**—Desde la tarde del día 29 hasta el 31 de Julio las observaciones de Guam dieron indicios de una depresión ó tifón en los alrededores de la parte norte de las Islas Ladrones ó Marianas. El día 1, sobre todo por la tarde, las observaciones de las Islas Bonín señalaban su existencia y su posición hacia el sur de aquellas islas y cerca de 20° Lat. N. Según nuestros mapas del tiempo de los tres días siguientes, se puede situar el centro de este tifón al SW de Bonín á 2 p. m. del día 2; al W de Bonín á 2 p. m. del 3; al sur y cerca de Japón á 2 p. m. del 4; y en el norte de Nippon á 2 p. m. del 5.

**Tifón de 10 á 16 de Agosto.**—Una nueva bajada algo notable del barómetro en Guam con vientos del SW indicaba el día 10 la presencia de otro tifón entre los meridianos 145° y 147° y entre los paralelos 16° y 19°. Este tifón al igual que el anterior recurvó hacia el Japón, pero después de haberse acercado mucho más que aquel á las Islas Liukiu. Efectivamente, la tarde del día 14 se hallaba el vórtice al este y muy cerca de la parte septentrional de dicho grupo de Islas, desde donde emprendió su marcha hacia el Japón moviéndose al NE próximamente.

**Tifón de 14 á 22 de Agosto.**—No había aún llegado al Japón el tifón de que acabamos de hablar, cuando las observaciones de Guam de la tarde del 14 y mañana del 15 señalaban un nuevo centro ciclónico al E y no lejos de las Islas Marianas. Como por la tarde del 15 se presentaba simultáneamente al sur de Guam otro tifón ó depresión de la cual hablaremos más abajo, las observaciones hechas en aquella estación dejaron de obedecer al tifón anterior que se hallaba á mayor distancia y se movía bastante inclinado al norte. Según las observaciones de Bonín, Liukiu y Japón, el tifón después de haberse movido por tres ó cuatro días al NW recurvó al nordeste el día 19 cuando demoraba el vórtice al E de la parte norte de las Islas Liukiu y á unas 300 millas de distancia.

## TIFÓN DE 7 Á 15 DE AGOSTO, 1911

Los mapas del tiempo del día 7, especialmente el de la tarde, no daban lugar á duda sobre la existencia de un tifón al W de las Islas Marianas: tifón que, á juzgar por las observaciones de Guam y de Yap, bien pudo ser que se hubiese estado formando y desarrollando al NW de Guam desde el día 2. El día 8 á las 2 p. m. se podía situar el centro de este tifón casi á la mitad de distancia entre Marianas y Liukiu, en los alrededores de 20° Lat. N y 135° Long. E. Era un ciclón de inmensas dimensiones, pues su influencia se extendía desde las Marianas á Liukiu y Formosa y desde las Filipinas á Bonín. Se movió en un principio al NW hasta el 8 inclusive, y aún al NW¼N el día

9 y la noche del 9 al 10: mas, al amanecer de este último día, se inclinó extraordinariamente al W moviéndose al W¼NW hasta que penetró en el Continente la madrugada del día 11 por entre los meridianos 121° y 122° y los paralelos 28° y 29°. Una vez en el Continente, dirigió de nuevo su marcha al NW y recurvó por fin al NE el día 12. Durante el día 14 atravesó la Manchuria en dirección al ENE.

### OTRAS TRES DEPRESIONES Ó TIFONES DESDE EL 10 AL 24 DE AGOSTO, 1911.

**Depresión ó tifón de 10 á 14 de Agosto.**—Se hallaba todavía el tifón anterior en el Mar del Este y en China al S y SW de Shanghai, cuando nuestros mapas del tiempo de la tarde del 10, y sobre todo los del día 11 daban señales claras de haber quedado un centro ciclónico al E del sur de Formosa, ó más bien del canal de Bashi, y á no mucha distancia. Sin embargo, el día 12, aunque podía todavía distinguirse bien este centro, pero parecía hallarse estacionario y con tendencia á rellenarse. El día 13, apenas podía apreciarse más que un área de baja presión que se extendía desde el Mar de China hasta el Pacífico á través del norte de Luzón y de los canales Bashi y Balintang. Por último, el día 14 todavía nos fué posible situar una depresión en la parte nordeste del Mar de China, la cual había desaparecido por completo el día siguiente. De estas ligeras indicaciones ya comprenderán nuestros lectores por qué en la lámina IX hemos omitido la trayectoria de esta depresión.

**Depresión ó tifón de 15 á 19 de Agosto.**—Á la trayectoria de esta depresión ó tifón que damos en la lámina IX no le podemos dar más que un valor algo probable, sobre todo por lo que toca á la primera parte, es decir, á los días 15 y 16. Los vientos de Guam y Yap de la tarde del 15 y mañana del 16 parecen señalarla hacia el este de Yap y sur de Guam, y, según todas las apariencias, el vórtice pasó por el norte de Yap la noche del 16 al 17 moviéndose al NW¼W. Sin embargo, llama desde luego la atención que la mínima en Yap no tuviese lugar hasta el 18: esto sólo podría explicarse suponiendo que la depresión iba extendiendo más sus isobaras á medida que se alejaba de Yap y se acercaba á Luzón. Esta depresión se deshizo, al parecer, el 19 al NE de Luzón.

**Depresión ó tifón de 21 á 24 de Agosto.**—Esta depresión, que casi merecería el nombre de tifón, se formó del 21 al 22 en las proximidades de las Islas Paracels, y, moviéndose al W, penetró en Annam por los alrededores de Tourane la noche del 23. Véanse á continuación los avisos de tifón que se cruzaron entre Manila y Hongkong, y los que á su vez trasmitió Zikawei á las estaciones de la costa de China.

**Manila:**

Día 23, 11.15 a. m.: Depresión en la parte norte del Mar de China, moviéndose al W.

**Hongkong:**

Día 23, 12.25 p. m.: Tifón al E de Paracels, dirección desconocida.
Día 24, 12.30 p. m.: Tifón en Annam, moviéndose al W.

**Zikawei:**

Día 23, 8.45 a. m.: Tifón al S de Macclesfield, dirección desconocida.
Día 23, mediodía: Tifón al S de Macclesfield, moviéndose al NW.
Día 23, 9 p. m.: Tifón en frente de Annam, moviéndose al NW.

El Observatorio de Manila especificó más la posición y trayectoria de esta depresión ó tifón en las siguientes notas del tiempo publicadas en los periódicos de la Capital:

Día 23, 11.45 a. m.: Hay indicios de otra depresión en el Mar de China en los alrededores de Paracels, moviéndose al W.

Día 24, 11.50 a. m.: La depresión ó tifón del Mar de China se ha movido al W y ha penetrado en la parte central de Indochina cerca de Tourane.

## EL BAGUIO DE BATANES Y SUR DE FORMOSA, 21 Á 29 DE AGOSTO, 1911.

Á pesar de lo mucho que se ha hablado de los baguios que durante este año han visitado las Islas Filipinas, sin embargo poco es lo que se ha dicho acerca del más intenso de todos ellos y que bien merece contarse en el número de esos pocos tifones de muy extraordinaria violencia que sólo de cuando en cuando atraviesan nuestro Archipiélago dejando en pos de sí las más tristes huellas de ruina y destrucción. Nos referimos al baguio que desfogó el 26 de Agosto en las Islas Batanes y en el Sur de Formosa. El no haberse hablado apenas en Manila de este baguio debe atribuirse á la falta de comunicación telegráfica con las Islas Batanes y al hecho de que sólo un mes después de la catástrofe llegaron á la capital las noticias de tan furioso temporal.

El Observador encargado de la estación de Santo Domingo asegura que, según testimonio de los más ancianos del pueblo, jamás habían experimentado baguio igual á éste. Asimismo, según carta del Director del Observatorio de Taihoku, el Jefe de la Estación de Koshun, en el Sur de Formosa, informó que este tifón fué *mucho más* fuerte que el de 29 de Agosto del año pasado. Ahora bien, en la discusión de aquel tifón publicada en nuestro Boletín correspondiente de Agosto, 1910, se decía entre otras cosas lo siguiente sobre la grande velocidad que adquirió el viento en Koshun durante el paso del meteoro: "Una velocidad tan grande jamás se había observado desde el establecimiento de esta estación."

El Director del Observatorio de Taihoku, Mr. H. Kondo, ha tenido la bondad de poner á disposición de este Observatorio isobaras, curvas barográficas y observaciones valiosas que sirven admirablemente para confirmar el curso que supusimos había seguido este baguio á través de la costa sudoeste de Formosa y del canal de Formosa durante la noche del 26 y mañana del 27. Aprovechamos gustosos esta ocasión para manifestar nuestra gratitud al mencionado Mr. Kondo por su prontitud y generosidad en favorecernos con tales datos é informes.

**Origen de este baguio.**—Con toda probabilidad se formó este baguio el día 21 al W de la parte meridional de las Islas Ladrones ó Marianas, según parece poder desprenderse de las observaciones hechas en Guam y Yap, las cuales verán nuestros lectores en una tabla en el texto inglés. En este día 21 fué cuando el Observatorio de Manila envió á los demás Centros Meteorológicos del Extremo Oriente su primer aviso de tifón referente á este baguio: es decir, cinco días antes de que desfogase con toda su furia en las Islas Batanes. Este aviso de tifón decía así:

Día 21, 7.10 p. m.: Tifón al W de las Islas Ladrones ó Marianas; dirección desconocida.

El día siguiente 22 pudimos ya precisar la dirección que llevaba por entonces el baguio por medio de estos telegramas:

Día 22, 10.30 a. m.: Tifón al W de las Islas Ladrones ó Marianas, moviéndose al W ó WNW.
Día 22, 5.35 p. m.: Tifón al W de las Islas Ladrones ó Marianas, moviéndose al W.

**El baguio en las Islas Batanes.**—El día 23 pudimos ya notar que se trataba de un baguio de grande extensión y probablemente también de mucha intensidad; pues, á pesar de hallarse todavía el vórtice á más de 500 millas de las costas más orientales de Filipinas, se notaba ya en ellas claramente su influencia así en los movimientos del barómetro como en las corrientes atmosféricas. De ahí que el Observatorio pudiera enviar en dicho día sus primeros avisos preventivos á varias estaciones de Filipinas con este telegrama que fué igualmente trasmitido á los Observatorios de Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 23, 9.35 a. m.: Tifón en el Océano Pacífico, á la mitad de camino entre las Islas Marianas y Luzón, moviéndose al W.

El día 24 la influencia del tifón era tan manifiesta en todo Filipinas que el observador de Santo Domingo pudo por sí mismo y con solas sus observaciones pasar un aviso á las autoridades provinciales y municipales anunciando la existencia de "un tifón hacia el cuadrante del SE que se acercaba á la localidad." El 25 por la mañana volvió el mismo observador á insistir en su predicción comunicando á las autoridades que "el baguio se iba acercando poco á poco." Y á las 10 p. m. del mismo día "mandó aviso al presidente del municipio para que ordenase á los concejales que en la primera hora del día siguiente estuviesen cada uno en su puesto con sus gentes para asegurar los edificios públicos," como así se hizo á las 4 a. m. del 26.

En una tabla que publicamos en el texto inglés verán nuestros lectores las observaciones hechas en la citada estación de Santo Domingo. Y en la lámina X reproducimos una copia exacta de la curva barográfica obtenida en la misma estación. Es mucho de lamentar que no nos haya sido posible saber la altura mínima que alcanzó el barómetro en este baguio á su paso por Santo Domingo. Como se ve en la curva, la pluma llegó al extremo del papel (715 mm) unas dos horas antes del paso del vórtice. Por otra parte, el observador se vió en verdaderos apuros en aquellos momentos críticos para salvar de una completa ruina los aparatos y enseres más delicados de la estación, y de ahí que no le fuese posible tomar observaciones directas del barómetro en las cercanías del vórtice. Y aún las que había tomado en las horas precedentes tuvo el sentimiento de ver que se le habían extraviado debiendo sustituirlas por las de la curva barográfica.

La falta de esta mínima barométrica de este baguio es tanto más de sentir cuanto que á nuestro juicio hubo de ser una de las más bajas y aún tal vez la más baja de cuantas hasta el presente llevamos observadas en Filipinas. Así lo deducimos de la curva barográfica mencionada con su altura de 715 mm. unas dos horas antes de la mínima y más aún de la comparación de dicha curva con la de Koshun (Sur de Formosa) la cual damos en la misma lámina X. Cualquiera verá que, según estas curvas, la mínima en Santo Domingo hubo de ser bastante menor que en Koshun. Y sin embargo, en Koshun donde se hicieron observaciones directas de hora en hora hallamos una mínima de 702.9 mm. Además, si antes de alcanzar el barómetro la altura de 715 mm. en Santo Domingo hubo una bajada de más de 10 mm por hora (de 6 á 7 a. m.), como se ve en la curva, no creemos que sea exagerado suponer que en las dos horas más próximas á la mínima bajase á razón de 12 á 15 mm. por hora, y por consiguiente que la mínima barométrica hubiese sido 690 mm., ó tal vez menor. El mismo observador de Santo Domingo dice muy bien en su report: "Yo creo que prolongando las dos líneas de bajada y subida del barógrafo tendríamos una mínima menor de 690 mm." Ahora bien, una mínima tan baja como esta solo se puede comparar con la observada á bordo del vapor *Pathfinder* durante el famoso "Baguio del Cantabria," Septiembre, 1905, la cual fué 690.12 mm. y era con razón tenida como la menor observada hasta ahora en Filipinas.[1]

Con estos antecedentes nadie se extrañará de que fuesen tantos los destrozos y las pérdidas causadas por este baguio en un pueblo relativamente pequeño como el de Santo Domingo que no contará más que con unas 2,500 almas. En una copia que tenemos á la vista de un informe del presidente interino de aquel municipio, D. Claudio Blacer, hallamos los siguientes datos oficiales sobre los efectos destructores de este baguio:

| | |
|---|---|
| Casas arruinadas | 79 |
| Casas con desperfectos de mucha consideración | 78 |
| Casas con pequeños desperfectos | 366 |
| Animales vacunos muertos | 28 |
| Otros animales muertos | 62 |
| Pequeñas bancas perdidas y destrozadas | 30 |

Los edificios públicos del Gobierno, township, escuela pública, convento é iglesia han sufrido muchos desperfectos no quedando en pie de la última más que las paredes.

Del número de casas arruinadas una tercera parte eran de materiales fuertes.

Se calcula que la suma total de las pérdidas sufridas no bajará de ₱50,000.

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[1] Véase "El Baguio del Cantabria," Septiembre 22–28, 1905, por el P. Miguel Saderra Mata, S. J., Director Auxiliar de la Oficina Meteorológica.

Hasta aquí parte del informe del Sr. Presidente.

Véase á continuación los avisos de tifón enviados por el Observatorio de Manila los días 24, 25 y 26:

> Día 24, 9 a. m.: Tifón al E de Luzón, distancia mayor de 300 millas, moviéndose al W.
>
> Día 25, 10 a. m.: Tifón al E de la parte norte de Luzón, distancia menor de 300 millas, moviéndose al WNW.
>
> Día 26, 8.30 a. m.: Tifón en el, ó cerca del, canal de Balintang, moviéndose al WNW.
>
> Día 26, 4 p. m.: Tifón en el, ó cerca del, canal de Bashi, moviéndose al WNW ó NW.

Que el baguio hubo de haberse sentido con extraordinaria intensidad en las Islas Batanes, lo quiso hacer constar el Observatorio en la siguiente nota publicada en los periódicos de la capital el día 28:

> Este tifón se ha movido al NNW desde la noche del Sábado y debió de desfogar con mucha intensidad en el grupo de las Islas Batanes la mañana del mismo Sábado (26).

Las noticias recibidas en Manila casi un mes después de los acontecimientos confirmaron plenamente esta nota del Observatorio.

**El baguio en el Sur de Formosa.**—En el texto inglés reunimos en una tabla parte de las observaciones hechas en Koshun, Tainán y Hokoto y que nos fueron remitidas por el Director del Observatorio de Taihoku, según dijimos al principio. Por ellas y por la trayectoria de este baguio á través del canal de Formosa (lámina XI) verán nuestros lectores cuán exactamente se verificó lo que decía el Observatorio en la nota del tiempo del 27: "El tifón se ha ido inclinando más y más al norte hallándose su centro esta mañana en el canal de Formosa cerca de la costa occidental de Formosa, moviéndose al NNW." El vórtice pasó, en efecto, muy cerca por el sudoeste de Koshun y de Tainán, moviéndose al NNW.

En el lado derecho de la lámina XI publicamos las isobaras de 9 p. m. del 26, y en la lámina X la curva barográfica de Koshun. Solamente advertiremos acerca de esta última que comparándola con las observaciones directas hechas en aquella estación, parece que debería aplicarse á la curva una corrección de unos —5 mm. antes de la mínima, y de unos —3 mm. después de la mínima.

El Jefe de la estación Meteorológica de Koshun describe en estos términos la gran violencia de este tifón:

> Este tifón fué mucho más fuerte que el del 29 de Agosto del año pasado. No ha habido casa alguna que no haya sido ó entera ó parcialmente destruida. Desgraciadamente no se pudo observar la mayor velocidad del viento por haber volado el viento los cucharones del anemómetro; pero probablemente llegó á 70 metros por segundo.

El Director del Observatorio de Taihoku nos dice que según informes del Gobierno los daños causados en Formosa por este baguio son:

| | |
|---|---|
| Personas muertas | 197 |
| Personas heridas | 122 |
| Casas enteramente destruidas | 13,624 |
| Casas parcialmente destruidas | 19,416 |

**Curso ulterior del baguio.**—El Observatorio de Manila envió este aviso de tifón la mañana del 27:

> Día 27, 9 a. m.: Tifón en el, ó cerca del, canal de Formosa, moviéndose al NNW.

El curso ulterior del baguio se fué indicando día por día en las notas ordinarias del tiempo con los siguientes términos:

> Día 28, 11.50 a. m.: El tifón entró en el continente ayer tarde y se halla esta mañana dentro de China al SW de Shanghai. Se ha movido al NNW desde la noche del Sábado.
>
> Día 29, 11 a. m.: El tifón de la semana pasada ha seguido moviéndose al NNW y se halla esta mañana en China al W de Shanghai.

Comparando las observaciones de Koshun con las de Tainán y Hokoto y de otras estaciones de la costa de China, parece poder asegurarse que el baguio perdió mucho de su intensidad y profundidad poco después de haber pasado junto á Koshun. Así se explicaría cómo se observó en Hokoto la mínima barométrica bastantes horas antes de que pasase el vórtice á la menor distancia y algunos otros hechos que parecerían notables anomalías si se supusiese que el tifón conservaba en el canal de Formosa y en el continente la misma forma que cuando demoraba en el Sur de Formosa.

**Avisos de tifón de los Observatorios de Hongkong y Zi-Ka-Wei.**—Vamos á terminar esta discusión de este baguio copiando aquí los avisos de tifón que sobre él nos remitió el Observatorio de Hongkong y los que á su vez trasmitió á las estaciones de la costa de China el Observatorio de Zi-Ka-Wei.

**Observatorio de Hongkong:**

Día 24, 12.30 p. m.: Tifón al E de Luzón, moviéndose al W.
Día 25, 10.55 a. m.: Tifón al NE de Luzón, moviéndose al WNW.
Día 26, 10.20 a. m.: Tifón cerca del canal de Balintang, moviéndose al NW.
Día 26, 5.45 p. m.: Tifón cerca del canal de Bashi, moviéndose al NW.
Día 27, 10.40 a. m.: Tifón en la parte central del canal de Formosa, moviéndose al N.

**Observatorio de Zi-Ka-Wei:**

Día 21, 9.30 a. m.: Tifón al SW de Guam, moviéndose al WNW.
Día 22, 9.35 a. m.: Tifón entre el N y E de Yap, moviéndose al NW ó WNW.
Día 23, 4.15 p. m.: Tifón entre el N y W de Yap, moviéndose al WNW.
Día 24, 10.15 a. m.: Tifón lejos al E de Filipinas, moviéndose al NW.
Día 24, 9 p. m.: Tifón al E de Luzón, moviéndose al NW.
Día 25, 9.45 a. m.: Tifón al NE de Luzón, moviéndose al NW.
Día 26, 9.45 a. m.: Tifón al E del canal de Balintang, moviéndose al NW.
Día 26, 4.15 p. m.: Tifón al SE de Formosa, moviéndose al NW.
Día 26, 9 p. m.: Tifón en el canal de Bashi, moviéndose al NW.
Día 27, 8.15 a. m.: Tifón en el centro de Formosa, moviéndose al NW.
Día 27, 2.20 p. m.: Tifón en el centro del canal de Formosa. moviéndose al NW ó NNW.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 754.20 | 25.9 | 28.9 | 24.3 | 27.7 | 27.9 | 28.3 | 28.4 | 28.2 | 28.6 | 90.8 | 22.5 | 0 | 0.8 |
| 2 | 55.53 | 26.5 | 30.4 | 24.1 | 27 | 28 | 27.4 | 28 | 28.2 | 28.8 | 88.8 | 22.8 | 1.6 | 1.8 |
| 3 | 56.19 | 26.3 | 31.7 | 24.7 | 27.9 | 28.1 | 28.1 | 28.1 | 28.3 | 28.8 | 89.8 | 22.8 | .8 | 1.7 |
| 4 | 56.41 | 27.5 | 32.5 | 23.7 | 27.8 | 29 | 28.1 | 28.3 | 28.3 | 28.8 | 82.8 | 22.5 | 3.9 | 2.8 |
| 5 | 56.91 | 27.6 | 32.4 | 23.6 | 28.2 | 29.4 | 28.6 | 28.7 | 28.2 | 28.8 | 81.4 | 22.2 | 4.1 | 3 |
| 6 | 57.72 | 27.8 | 32 | 23.9 | 28.6 | 30 | 28.8 | 29 | 28.2 | 28.8 | 80.1 | 22.2 | 3.8 | 2.9 |
| 7 | 57.69 | 27.7 | 32.4 | 23.9 | 28.7 | 30 | 29 | 29 | 28.3 | 28.7 | 82 | 22.5 | 4.5 | 3.2 |
| 8 | 56.01 | 28.2 | 32.2 | 26.6 | 29 | 30 | 29.1 | 29.2 | 28.3 | 28.7 | 80.8 | 22.9 | 4.4 | 3.3 |
| 9 | 54.50 | 28.2 | 32.3 | 26.4 | 29 | 30 | 29 | 29.1 | 28.3 | 28.7 | 82.1 | 23.3 | 4.4 | 3.3 |
| 10 | 53.85 | 27.9 | 32.6 | 24.9 | 28.8 | 30 | 29 | 29.3 | 28.3 | 28.7 | 81.4 | 22.8 | 3.2 | 3 |
| 11 | 54.34 | 28.6 | 32.7 | 26.3 | 28.5 | 29.7 | 29.1 | 29.2 | 28.3 | 28.7 | 79.6 | 23.2 | 4.2 | 3.3 |
| 12 | 55.40 | 27.3 | 31.6 | 24.8 | 28.8 | 29.3 | 29 | 29.3 | 28.3 | 28.7 | 84.2 | 22.6 | 2.1 | 2 |
| 13 | 55.24 | 25.1 | 27.6 | 23.6 | 27.8 | 26.1 | 28.5 | 27.7 | 28.3 | 28.4 | 93.3 | 22.1 | .2 | 1.1 |
| 14 | 55.63 | 26.6 | 30.6 | 24 | 26.8 | 28 | 27.7 | 27.8 | 28.3 | 28.6 | 86.5 | 22.3 | 2.1 | 1.9 |
| 15 | 58.08 | 26.7 | 31.3 | 23.5 | 27.2 | 28.6 | 27.6 | 27.8 | 28.4 | 28.5 | 83.7 | 21.7 | 3.1 | 2.3 |
| 16 | 59.20 | 27 | 31.9 | 23.5 | 27.7 | 29.1 | 28 | 28.3 | 28.4 | 28.7 | 83.2 | 22 | 3.1 | 2.2 |
| 17 | 58.41 | 26.1 | 31.7 | 23.7 | 28 | 28.9 | 28.2 | 28.4 | 28.4 | 28.7 | 87.9 | 22 | .6 | 1.1 |
| 18 | 57.12 | 25 | 29.8 | 23.1 | 28 | 28.8 | 28.3 | 28.4 | 28.3 | 28.7 | 91.2 | 21.5 | .3 | .6 |
| 19 | 56.75 | 24.9 | 29.6 | 23 | 27.2 | 27.8 | 28.2 | 28 | 28.4 | 28.6 | 89.5 | 20.9 | .7 | 1 |
| 20 | 57.13 | 24.8 | 28.4 | 23 | 26.4 | 27.2 | 27.3 | 27 | 28.3 | 28.5 | 90.8 | 21.1 | .6 | 1.3 |
| 21 | 57.16 | 25.5 | 30.2 | 22.1 | 26.4 | 28 | 27.2 | 27.5 | 28.3 | 28.5 | 85 | 20.5 | 3 | 2.2 |
| 22 | 56.74 | 26.5 | 31.9 | 22.3 | 27.3 | 28.7 | 27.9 | 27.9 | 28.3 | 28.7 | 82.4 | 21 | 3.6 | 2.6 |
| 23 | 56.44 | 26.9 | 31.8 | 23.8 | 28 | 29.2 | 28.1 | 28.2 | 28.3 | 28.7 | 83.1 | 21.7 | 3.2 | 2.4 |
| 24 | 55.75 | 26 | 30.7 | 24.1 | 28 | 29 | 28.3 | 28.5 | 28.3 | 28.6 | 88.5 | 22 | 1 | 1.7 |
| 25 | 53.14 | 25.8 | 28 | 23.2 | 27.4 | 27.8 | 28.1 | 28.4 | 28.3 | 28.7 | 84.4 | 20.7 | 2.1 | 2.7 |
| 26 | 53.32 | 27 | 30.5 | 23 | 27 | 28 | 27.8 | 28 | 28.2 | 28.6 | 83.2 | 22.1 | 3.5 | 2.7 |
| 27 | 55.79 | 27.5 | 31.4 | 24.7 | 27.6 | 28.7 | 28.1 | 28.3 | 28.3 | 28.7 | 83 | 22.6 | 3 | 2.5 |
| 28 | 57.68 | 27.3 | 31.4 | 24.8 | 28 | 28.6 | 28.2 | 28.5 | 28.3 | 28.6 | 84.9 | 22.8 | 2.1 | 2.6 |
| 29 | 56.94 | 27.9 | 31.6 | 25.3 | 28 | 28.9 | 28.5 | 28.6 | 28.4 | 28.6 | 83.6 | 23.4 | 2.5 | 2.7 |
| 30 | 56.18 | 26.7 | 29 | 24.4 | 27.8 | 28 | 28.2 | 28.5 | 28.3 | 28.7 | 87.9 | 22.9 | 1.4 | 1.9 |
| 31 | 56.07 | 28 | 30.8 | 26 | 27.7 | 28.6 | 28.3 | 28.3 | 28.4 | 28.6 | 83.2 | 23.8 | 4.4 | 3.4 |
| Mean | 756.18 | 26.8 | 31 | 24.2 | 27.8 | 28.7 | 28.3 | 28.4 | 28.3 | 28.7 | 85.1 | 22.2 | 2.5 | 2.3 |
| Total | | | | | | | | | | | | | 77.5 | 70 |
| Departure from normal | −1.18 | —0.3 | +0.3 | +0.5 | | | | | | | +0.2 | —0.3 | | |

| Date. | Wind. | | | | Clouds. | | | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | | | |
| | | | | | | Upper. | | Lower. | | | | | |
| | | *Km.* | *Km.* | | *0-10.* | | | | | *h.* | *m.* | *mm.* | |
| 1 | SW | 641 | 37 | SW | 10 | | | N. | SW | 0 | 00 | 30 | ↙° ● a. p. |
| 2 | SW quad. | 401 | 32 | SW | 10 | Ci.-S. | | Cu.-N. | SW | 0 | 00 | 14.6 | ↙° a. ● a. p. |
| 3 | SW quad. | 326 | 34 | S | 9.3 | Ci.-S. | | Cu.-N. | WSW | 2 | 30 | 14.3 | ⊤ a. ● a. p. ↙°p. |
| 4 | SW quad. | 314 | 28 | SWbyW | 5.2 | Ci. | | Cu. | SW | 10 | 00 | .8 | ⌒² d° a. |
| 5 | SW quad. | 266.5 | 29.5 | WbyS | 7.5 | Ci. | | Cu. | WSW | 9 | 05 | | Ω a. |
| 6 | WSW | 279.5 | 25 | WSW | 6.7 | Ci. | ENE | Cu. | WbyS | 8 | 05 | | |
| 7 | SW quad. | 370.5 | 31 | SW | 4.8 | A.-Cu. | E | Cu. | WSW | 8 | 45 | | |
| 8 | W quad. | 533 | 38 | WSW | 7.8 | A.-Cu. | E | Cu. | W | 4 | 20 | | d° a. |
| 9 | WSW | 748 | 48 | WSW | 8.8 | Ci. | | Cu. | W | 4 | 50 | .3 | ↙° a. p. ↯°● p. |
| 10 | WSW | 734 | 45 | WSW | 9.3 | Ci -S. | | Cu.-N. | W | 2 | 10 | 1 | d° a ↙° a. p.●°p. |
| 11 | WSW | 884 | 45 | WSW | 7.2 | A.-Cu. | E | Cu. | W | 7 | 05 | .5 | ●° ↙°a. |
| 12 | SW quad. | 619 | 36 | WSW | 9.5 | Ci.-S. | | Cu.-N. | W | 3 | 15 | 4.2 | ↙° a. ● a. p. |
| 13 | SW quad. | 458 | 43 | SWbyW | 10 | Ci.-S. | | N. | WSW | 0 | 00 | 133.1 | ● a. p. |
| 14 | SW quad. | 575 | 36 | WSW | 9.9 | Ci.-S. | | Cu.-N. | WbyN | 0 | 35 | 46.3 | ● a. p. |
| 15 | SW quad. | 353.5 | 41 | WbyS | 9.5 | Ci.-S. | | Cu. | | 4 | 40 | 12.9 | ● a. |
| 16 | SW quad. | 265.5 | 26 | SW | 9.2 | Ci.-S. | | Cu. | WSW | 5 | 05 | 1.8 | ● a. |
| 17 | SW quad. | 220 | 28 | WSW | 8.7 | Ci.-S. | | Cu -N. | WSW | 5 | 05 | 11 | ⊤ a. ● a. p. |
| 18 | Variable | 172 | 16 | NW | 9.6 | A -Cu. | SW | Cu.-N. | W | 1 | 40 | 9.4 | ● a. p. |
| 19 | SW quad. | 244 | 37.5 | WSW | 9.9 | Ci.-S. | | N. | SW | 0 | 50 | 10.6 | ● a. p. |
| 20 | W quad. | 303.5 | 25 | SW | 10 | Ci.-S. | | N | W | 0 | 00 | 80.4 | ● a. p. |
| 21 | SW quad. | 314 | 32 | WSW | 6.5 | A.-Cu. | | Cu.-N. | SW | 6 | 35 | .4 | d° a. |
| 22 | W quad. | 194.5 | 24 | SW | 5.1 | A.-Cu. | E | Cu. | WSW | 9 | 35 | | |
| 23 | SW quad. | 205 | 24 | SWbyS | 8.1 | Ci.-S. | ENE | Cu. | E | 6 | 20 | | ○ a. ↯ d° p. |
| 24 | NW quad. | 248.5 | 24 | WSW | 9.8 | Ci.-S. | | Cu.-N. | NW | 1 | 10 | 6.3 | ● p. |
| 25 | W | 444 | 37 | W | 10 | | | Cu.-N. | WbyN | 0 | 00 | 2.7 | d a. p. |
| 26 | SW quad. | 828 | 54 | WSW | 9.9 | Ci.-S. | | Cu.-N. | WSW | 0 | 10 | 9.4 | ● ↙° a. |
| 27 | SW quad. | 414 | 30 | SW | 9.6 | Ci.-S. | | Cu. | WbyS | 7 | 45 | .6 | ○² a. p. ●° p. |
| 28 | SW quad. | 515 | 33 | WSW | 8.1 | Ci.-S. | | Cu. | SW | 5 | 35 | 8.1 | ● a. p. |
| 29 | WSW | 775 | 37 | WSW | 8.2 | Ci.-S. | | Cu. | W | 5 | 30 | 5.7 | ● a. p. |
| 30 | WSW | 759 | 44 | WSW | 10 | Ci.-S. | | Cu.-N. | WSW | 0 | 00 | 13.2 | ● a. p. ↯ ≤ p. |
| 31 | SW | 896.5 | 46.5 | WSW | 7.1 | Ci. | | Cu. | WSW | 6 | 25 | 1.8 | ● a. ○ ↙° p. |
| Mean | | 461.3 | 34.4 | | 8.6 | | | | | 4 | 06 | | |
| Total | | | | | | | | | | 127 | 05 | 419.4 | |
| Departure from normal | | +170.5 | | | + 0.8 | | | | | —18 | 01 | +66.5 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters a bove ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### TAGBILARAN.

[φ=9° 38′ N; λ=123° 51′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12 | 0-10. | | | mm. | |
| 1 | 757.30 | ------ | ------ | ------ | ------ | S quad. | 1.8 | 3 | Ci., Ci.-S. | Cu. | ------ | ϟ° p. |
| 2 | 57.57 | ------ | ------ | ------ | ------ | SE quad. | 1.3 | 5.3 | Ci.-S. | Cu. SSW | ------ | |
| 3 | 57.59 | ------ | ------ | ------ | ------ | SW quad. | .7 | 2.2 | Ci. | Fr.-Cu. SW | ------ | ⍦$^{2}$ p. |
| 4 | 57.41 | ------ | ------ | ------ | ------ | SW quad. | .8 | 3.2 | Ci.-S. | Fr.-Cu. SW | ------ | ⦶$^{2}$ ϟ° p. |
| 5 | 57.36 | ------ | ------ | ------ | ------ | W, S | .3 | 2.7 | Ci. SSE | Cu. | ------ | |
| 6 | 57.57 | ------ | ------ | ------ | ------ | NW, S | .3 | 3.3 | Ci. | Cu. N | ------ | |
| 7 | 57.48 | ------ | ------ | ------ | ------ | S quad. | .8 | 4.8 | Ci.-S. | Cu. SW | ------ | |
| 8 | 56.26 | ------ | ------ | ------ | ------ | S quad. | 1.7 | 6.5 | Ci.-S. | Cu. NNE, SSW | ------ | ⍦$^{2}$ p. |
| 9 | 55.90 | ------ | ------ | ------ | ------ | SW quad. | 1.8 | 3.3 | Ci. | Cu. SW | ------ | ⦶° ⍦° p. |
| 10 | 55.57 | ------ | ------ | ------ | ------ | S | 1.7 | 5.2 | Ci.-S. | Cu. SSW, W | ------ | |
| 11 | 56.66 | ------ | ------ | ------ | ------ | SW quad. | 1.8 | 5.7 | Ci.-S., Ci. | Cu. SSW, W | ------ | |
| 12 | 57.19 | ------ | ------ | ------ | ------ | SW quad. | 2.3 | 4.3 | Ci.-S., Ci. | Cu. SSW, W | ------ | |
| 13 | 57.50 | ------ | ------ | ------ | ------ | S, W | 1.8 | 4.7 | Ci.-S. | Fr.-Cu. SW | 1.3 | ●° p. |
| 14 | 58.02 | ------ | ------ | ------ | ------ | SW quad. | 1.3 | 3.7 | Ci., Ci.-S. | Cu. SSW | ------ | |
| 15 | 59.14 | ------ | ------ | ------ | ------ | S | .8 | 1.3 | Ci. | Cu. | ------ | |
| 16 | 58.85 | ------ | ------ | ------ | ------ | WNW, S | .3 | 1.7 | Ci. | Cu. SW, NW | ------ | |
| 17 | 58.64 | ------ | ------ | ------ | ------ | SW | .5 | 7.5 | Ci.-S. | Cu. NW | ------ | |
| 18 | 57.44 | ------ | ------ | ------ | ------ | Variable | .5 | 8 | Ci.-S. | Cu. | 1.5 | T° ϟ$^{2}$ p. |
| 19 | 57.60 | ------ | ------ | ------ | ------ | W, NW | 1.2 | 7.3 | Ci.-S. | Cu. NNW | ------ | ●° a. ϟ° p. |
| 20 | 57.72 | ------ | ------ | ------ | ------ | SW | 1.5 | 6.7 | Ci.-S. | Cu. W | 3 | ● p. |
| 21 | 57.75 | ------ | ------ | ------ | ------ | SW quad. | .8 | 6.5 | Ci.-S. | Cu. W | ------ | d° p. |
| 22 | 56.96 | ------ | ------ | ------ | ------ | W quad. | 1.3 | 6 | Ci.-S. | Cu. N | ------ | d° ϟ° p. |
| 23 | 56.80 | ------ | ------ | ------ | ------ | W | 1.8 | 9.2 | Ci.-S. | Cu. NW | ------ | |
| 24 | 56.08 | ------ | ------ | ------ | ------ | NW quad. | 2.2 | 8.8 | Ci.-S. | Cu. NW | ------ | |
| 25 | 56.08 | ------ | ------ | ------ | ------ | SW | 2.3 | 6.5 | Ci.-S. | Fr.-Cu. SSW | 2.3 | |
| 26 | 56.39 | ------ | ------ | ------ | ------ | S | 2 | 6.2 | Ci.-S. | Cu. SSW, SW | ------ | ●° a. |
| 27 | 57.63 | ------ | ------ | ------ | ------ | S quad. | 1.3 | 3.8 | Ci. | Cu. SSW | ------ | |
| 28 | 58.26 | ------ | ------ | ------ | ------ | Variable | .7 | 1.3 | Ci. | Cu. Variable | ------ | ϟ° p. |
| 29 | 57.83 | ------ | ------ | ------ | ------ | S, SW | 1.3 | 1.7 | Ci. | Cu. SSW | ------ | ϟ° p. |
| 30 | 57.46 | ------ | ------ | ------ | ------ | SW quad. | 1.3 | 2.2 | Ci. | Fr.-Cu. SW | ------ | ϟ$^{2}$ p. |
| 31 | 58.31 | ------ | ------ | ------ | ------ | S | 1.8 | 3.8 | Ci. | Cu. W | ------ | |
| Mean | 757.37 | ------ | ------ | ------ | ------ | ------------ | 1.3 | 4.7 | ---------------- | ---------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------- | ------- | ---------------- | ---------------- | 8.1 | |

### SURIGAO.

[φ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.86 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 757.16 | 28.1 | 33.6 | 23.3 | 78.7 | SW quad. | 1.2 | 6.2 | Ci. NE | Cu.-N. | ------ | Ω$^{2}$ a. ∞ Ω° p. |
| 2 | 57.60 | 28.5 | 33 | 24.5 | 75.2 | SW quad. | 1 | 7 | Ci.-S. | Cu.-N. SW | 3 | Ω a. ∞ p |
| 3 | 57.41 | 29.2 | 32.9 | 26.3 | 75.2 | SW quad. | 1 | 5.7 | Ci.-S. SE | Cu.-N., Cu. SW | ------ | Ω° ●° a. ∞ p. |
| 4 | 57.26 | 28.8 | 32.8 | 24.8 | 76 | SW quad. | 1.2 | 7 | Ci.-S. NE | Cu.-N. SW | ------ | ϟ a. ∞ Ω° p. |
| 5 | 57.23 | 27.6 | 33.2 | 23.8 | 80.7 | SW quad. | .8 | 7.2 | Ci.-S. NE | Cu.-N. SW | 5.8 | Ω$^{2}$ a. ∞ Ω° p. |
| 6 | 57.47 | 27.7 | 31.9 | 24.5 | 83.7 | SW quad. | .8 | 7.7 | Ci.-S. NE | Cu.-N. SW | ------ | ●° ⌈ϟ a. ∞ Ω° ϟ$^{2}$ p. |
| 7 | 57.04 | 28.5 | 31.5 | 26.3 | 78.5 | SW quad. | 2 | 7.7 | Ci.-S. NE | Cu.-N. SW | ------ | ϟ a. ϟ$^{2}$ p. |
| 8 | 55.86 | 28.3 | 31.8 | 25.7 | 77.3 | SW quad. | 1.8 | 9 | A.-Cu. NE | Cu.-N. SW | ------ | ⌈ϟ p. |
| 9 | 55.19 | 28.6 | 32 | 26.7 | 73.3 | SW | 3.7 | 8.3 | Ci.-S. E | Cu.-N. SW | ------ | ⍦ a. |
| 10 | 55.22 | 28.5 | 31.8 | 26.3 | 72.5 | SW | 3 | 7.7 | Ci. E | Fr.-Cu. SW | ------ | ○ a. ⍦ p. |
| 11 | 56.22 | 28.5 | 32.1 | 26.4 | 72 | SW | 2.8 | 8.3 | Ci. E | Cu.-N. SW | ------ | |
| 12 | 56.69 | 28.8 | 32.5 | 26.7 | 70 | SW | 2.3 | 7 | Ci. E | Cu. SW | ------ | ⍦ a. ∞ p. |
| 13 | 57 | 28.2 | 31.7 | 26.2 | 71.8 | SW | 3 | 9.5 | Ci.-S., Ci. E | Variable SW | ------ | |
| 14 | 57.63 | 28.8 | 33.5 | 24.2 | 68.2 | SW quad. | 1.7 | 5.2 | Ci.-S. E | Fr.-Cu. SW | ------ | ∞ Ω° p. |
| 15 | 59.11 | 27.8 | 33.8 | 23.5 | 74.7 | SW quad. | 1.2 | 3.8 | Ci. E | Cu. SW | ------ | Ω° a. ∞ ϟ° p. |
| 16 | 59.11 | 27.4 | 32.2 | 22.6 | 79.3 | W quad. | 1.2 | 6.2 | Ci.-S. | Cu.-N., Cu. SW | 16 | Ω$^{2}$ a. ∞ ϟ$^{2}$ p. |
| 17 | 58.42 | 26.7 | 29.6 | 24.2 | 83.2 | SSW | .8 | 9.8 | ---------------- | Cu.-N. SW | 23.9 | ●° ⌈ϟ ⌈ a. d° p. |
| 18 | 57.20 | 24.1 | 27.7 | 22.1 | 88.8 | SW | .8 | 9 | ---------------- | Fr.-N. SW | 42.4 | ●$^{2}$ a. d° a. p. ●° p. |
| 19 | 57.05 | 26.3 | 29.9 | 22.5 | 80.7 | SW | 1.8 | 8.8 | A.-Cu. | Fr.-N. SW | 8.4 | ●° a. |
| 20 | 57.44 | 27 | 31.3 | 24.2 | 80.7 | SW quad. | 1.7 | 8.2 | A.-Cu. W | Cu.-N. SW | 10.7 | ● p. |
| 21 | 57.25 | 27.2 | 31.1 | 22.4 | 78.8 | SW quad. | 2.3 | 9.5 | A.-Cu. W | Cu.-N. SW | 7.4 | ●° p. |
| 22 | 56.65 | 26 | 29.4 | 23.6 | 87 | SW, WSW | 2 | 10 | A.-Cu. W | Cu.-N. SW | 7.1 | d° a. p. |
| 23 | 55.94 | 25.8 | 27.9 | 22.6 | 83 | SW | 3.3 | 9 | Ci.-S. | Fr.-N. SW | 17.5 | ● a. |
| 24 | 54.96 | 26.8 | 29.4 | 25.1 | 76.5 | SW | 4.8 | 7.7 | A.-Cu. W | Fr.-N., Cu.-N. SW | ------ | p$^{2}$ a. ○ p. ↙° a. p. |
| 25 | 55.56 | 28.7 | 32.7 | 23.7 | 68.3 | SW | 3.2 | 6.3 | Ci.-S. NE | Cu. SW | ------ | |
| 26 | 55.85 | 29.4 | 33.5 | 26.3 | 66.5 | SW | 2.5 | 6.3 | Ci.-S. NE | Cu. SW | ------ | ↙° a. ∞ p. |
| 27 | 57.48 | 28.2 | 33.7 | 23.7 | 75.5 | SW | 1.3 | 3.7 | Ci. NE | Cu. SW | ------ | ∞ ϟ° p. |
| 28 | 58.29 | 27.8 | 33.5 | 23.4 | 78.3 | SW | .7 | 3 | Ci. | Cu.-N. | ------ | Ω$^{2}$ a. ∞ ϟ° p. |
| 29 | 57.71 | 29.2 | 33.5 | 26.4 | 71.3 | SW quad. | 1.5 | 1.8 | ---------------- | Cu.-N. | ------ | ϟ° p |
| 30 | 57.29 | 29.2 | 32.7 | 25.8 | 68.8 | SW quad. | 1.3 | 3.7 | Ci. NE | Cu.-N. | ------ | ∞ ϟ° p. |
| 31 | 57.92 | 29 | 33.9 | 26.1 | 73.3 | S quad. | 1.2 | 5.7 | Ci.-S. NE | Cu.-N. | ------ | ∞ p. |
| Mean | 757.04 | 27.9 | 31.9 | 24.6 | 76.4 | ------------ | 1.9 | 7 | ---------------- | ---------------- | ----- | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------- | ------- | ---------------- | ---------------- | 142.2 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h | 0-10. | | | mm. | |
| 1 | 757 | 27.7 | 31.4 | 24.8 | 74.7 | W | 11.7 | 4.8 | Ci | Cu. SW | 0.8 | Ω ≡° a. ● ⊕ p. |
| 2 | 57.18 | 27.7 | 30 | 25.5 | 76.8 | SW | 8.8 | 6.8 | Ci.-S. | Cu. SW | ------ | Ω d a ◯ a. p. ⊍ |
| 3 | 57.24 | 28.4 | 31.2 | 25.6 | 74.7 | SW | 10 | 4 | Ci. | Cu. SW | ------ | Ω a ⊍ p. |
| 4 | 57.30 | 28 | 31.2 | 25 | 75.7 | SW | 8.8 | 6 | Ci.-S. | Cu. SW | ------ | Ω a ⊕ p. |
| 5 | 57.19 | 27.8 | 32.2 | 24.4 | 75.2 | SW quad. | 8.6 | 4.3 | A.-Cu. E | Cu. SW | ------ | Ω ≡° a. ΓƷ p. |
| 6 | 57.63 | 27.7 | 32.6 | 23.4 | 74 | SW | 7.2 | 4.7 | Ci. | Cu. WSW, W | ------ | ϟ ΓƷ a. p. |
| 7 | 57.31 | 28.1 | 31.9 | 24 | 74 | SW | 7.7 | 5.3 | Ci.-S. | Cu. W, NW | 1 | Ω a. ΓƷ ● p. |
| 8 | 55.96 | 28.4 | 31.8 | 26 | 71.7 | SW | 9 | 6.7 | A.-Cu. ENE | Cu. WNW | ------ | Ω ϟ a. ΓƷ ⊤ p. |
| 9 | 55.28 | 28.9 | 33.8 | 25.3 | 66.2 | SW quad. | 12.1 | 5.3 | Ci.-S. | Cu. W | ------ | ⊍ Ω a. ⊍ p. |
| 10 | 55.20 | 27.8 | 31 | 25.5 | 72.2 | SW | 12.6 | 7 | Ci.-S. | Cu. SW, W | ------ | Ω a. ⊕ a. p. |
| 11 | 56.12 | 27.4 | 31 | 25 | 75 | SW | 11.6 | 6.2 | Ci.-S. | Cu. W | ------ | Ω a. ⊕ p. |
| 12 | 56.87 | 28.3 | 31.1 | 25.3 | 72.4 | SW | 11.4 | 5.8 | A.-Cu., Ci. | Cu. SW | 3 | ⊤ Ω ●° a. |
| 13 | 56.85 | 27.4 | 30.5 | 25 | 72.7 | SW | 14 | 5.5 | Ci.-S. | Cu. WSW | ------ | Ω ⊕ a. ΓƷ ⊍ p. |
| 14 | 57.53 | 27.3 | 30.4 | 24.1 | 72 | SW | 10.1 | 6 | Ci.-S. | Cu. SW, WSW | 6.4 | ⊕ a ● p. |
| 15 | 59.02 | 27.2 | 31.5 | 23.4 | 71.2 | SW quad. | 8.7 | 3.7 | Ci. | Cu. SW, WSW | ------ | Ω ≡ʾ a ∞ p. |
| 16 | 59.20 | 27.4 | 32.5 | 22.5 | 75.3 | S, SSW | 5.8 | 4.3 | Ci.-S. | Cu. SW | ------ | Ω ≡ʾ a. ϟ p |
| 17 | 58.63 | 26 | 30.7 | 22.1 | 79.8 | S | 7.8 | 8.5 | Ci.-S. ENE | Cu. W | 21.1 | ϟ Ω a. ⊤ ● p. |
| 18 | 57.34 | 24.7 | 27.9 | 22.4 | 86.7 | Variable | 3.8 | 8.3 | ------------------ | Cu.-N., N. W | 7.4 | ϟ ≡° a. ● a. p. ⊤ p. |
| 19 | 57.17 | 26.3 | 30.5 | 23.2 | 76.2 | SW | 7.2 | 7.5 | Ci.-S. | Cu.-N. W | ------ | d ≡ʾ a. |
| 20 | 57.40 | 26.8 | 30 | 24.6 | 74.2 | SW | 9.8 | 7 | Ci.-S. | S.-Cu. W | ------ | Ω a. ϟ p. |
| 21 | 57.54 | 26.7 | 29.9 | 24? | 76.3 | SW quad. | 10.1 | 7[2] | Ci.-S. | Cu. SW | 2 | Ω a. ΓƷ ● p. |
| 22 | 56.89 | 26 | 30.2 | 23.2 | 82.7 | SW quad. | 6.6 | 7.8[2] | Ci.-S. | Cu.-N. NW | 14.2 | Ω ◯ a. ⊤ ● ϟ p. |
| 23 | 56.41 | 26.8 | 30 | 23.8? | 75.2 | SW | 7.5 | 7.6[2] | Ci.-S. | S.-Cu. W | ------ | d a. |
| 24 | 55.45 | 26.8 | 29.6 | 24 | 74.8 | SW | 13.2 | 8.5 | Ci.-S. | Cu.-N. W, WSW | ------ | ⊕ a. |
| 25 | 55.36 | 27.1[1] | 30.6 | 23.8 | 73[1] | SW | 17.3 | 6.5[1] | Ci.-S. | Cu. SW | ------ | |
| 26 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | ------ | |
| 27 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | ------ | |
| 28 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | ------ | |
| 29 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | ------ | |
| 30 | 57.17 | 29.5[1] | 31.4 | ------ | 67.8[1] | SW quad. | 10.4 | 1.6[2] | Ci. | Cu. | ------ | ϟ p. |
| 31 | 57.86 | 27.6[1] | 30.5 | 25.9 | 76.2 | SW quad. | 10.5 | 5.3 | Ci.-S. | Cu.-N. SW | ------ | ◯ a. d° a. p. ⊕ ϟ° p. |
| Mean | 757.04 | 27.4 | 30.9 | 24.3 | 74.7 | ------------ | 9.7 | 6 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 55.9 | |

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km p. h. | 0-10. | | | mm. | |
| 1 | 756.90 | 27.1 | 28.9 | 23 | 86 | SW | 24.8 | 8.7 | Ci., Ci.-S. | Cu. SW | 1.8 | d ● a. p. ϟ p. |
| 2 | 57.40 | 26.9 | 29 | 24 | 83.7 | SW | 22.9 | 8.3 | Ci.-S. | Cu. SW | 7.9 | d a. ● a. p. |
| 3 | 57.49 | 26.9 | 29.1 | 23.5 | 85.8 | SW | 20.3 | 8.7 | Ci.-S., Ci. | Cu. SW | 20.3 | ● a. ϟ p. |
| 4 | 57.44 | 27.4 | 29.5 | 25.2 | 85.3 | SW | 17.8 | 8.8 | Ci. | Cu. SW | ------ | ● a. ⊍ p. |
| 5 | 57.43 | 27.7 | 29.7 | 26.5 | 83 | SW | --------- | 9 | Ci. | Cu. W, SW | ------ | d a. ⊍ p. |
| 6 | 57.87 | 27 | 29.8 | 24.2 | 85.7 | SW | --------- | 6.5 | Ci. | Cu. | ------ | Ω ◯ a. ⊤ d ⌒ p. |
| 7 | 57.64 | 27.3 | 30.1 | 23.8 | 80.8 | SW | 14.3 | 6.7 | A.-Cu. | Cu. | 1 | Ω a. ● ΓƷ p. |
| 8 | 56.43 | 27.2 | 30 | 24.1 | 80.2 | SW | 14.5 | 6.7 | Ci. | Cu. | ------ | Ω a. ◯ ⊍ p. |
| 9 | 55.72 | 28 | 29.8 | 26.4 | 77.5 | SW | 25.4 | 7.2 | Ci. | Cu. SW | .5 | d ϟ p. |
| 10 | 55.56 | 25.3 | 27.8 | 22 | 87.5 | SW | 20.1 | 9.8 | Ci.-S. | Cu. SW | 21.3 | d a ● ⊤ a. p. |
| 11 | 56.34 | 25.9 | 28.9 | 23.2 | 83.5 | SW | 19.7 | 9.7 | Ci.-S. | Cu.-N. SW | 18.6 | ● a p. |
| 12 | 57.39 | 24.8 | 28 | 23.2 | 88.3 | SW | 16 | 9.8 | Ci.-S. | Cu.-N. | 22.1 | ● a p. |
| 13 | 57.24 | 25.2 | 27.8 | 22.3 | 87.5 | SW | 16 | 9.5 | A.-Cu. W | Cu. | 34.9 | d ● a. p. ΓƷ p. |
| 14 | 57.86 | 25.5 | 27.6 | 22 | 84.8 | SW | --------- | 9.5 | Ci.-S. | Cu.-N. SW | 42.5 | ● a p. |
| 15 | 59.41 | 25.8 | 28.4 | 22.3 | 85.5 | SW | --------- | 5.8 | Ci. E | Cu. | .5 | ● a. |
| 16 | 59.48 | 27.1 | 29.5 | 24.9 | 81.5 | SW | --------- | 4.7 | Ci. | Cu. SW | ------ | Ω a. |
| 17 | 58.69 | 26.8 | 29.5 | 23.3 | 83 | SW | --------- | 8.5 | Ci.-S. | Cu. | ------ | Ω a ⊤ ΓƷ d ϟ p. |
| 18 | 57.36 | 26.6 | 28.3 | 23.4 | 80.5 | SW | --------- | 9.8 | Ci.-S. | Cu. | 3 | d a p. ϟ ●° p. |
| 19 | 57.44 | 26.2 | 29.3 | 23.6 | 76.2 | SW | --------- | 9.2 | A.-Cu. NW | Cu. | .3 | ●° a d a. p. |
| 20 | 57.59 | 26.3 | 28.8 | 24.7 | 78.5 | SW | --------- | 8.3 | A.-Cu. W | Cu. W | ------ | d ϟ p. |
| 21 | 57.84 | 25.5 | 29 | 23.1 | 83.5 | SW | --------- | 8.5 | Ci.-S. | Cu. | 7.7 | ⊤ a. ● d ϟ p. |
| 22 | 57.10 | 26 | 29.1 | 23.4 | 81 | SW | --------- | 8.5 | Ci. | Cu. | 5.1 | ⊤ ● ϟ p. |
| 23 | 56.84 | 26.2 | 27.8 | 24 | 75.3 | SW | 15.8 | 9.5 | Ci.-S. | Cu. | 7.4 | d ϟ p. |
| 24 | 56.15 | 26 | 29.4 | 22.6 | 76 | SW | 18.1 | 10 | Ci.-S. | Cu. | 8.1 | ● a. |
| 25 | 55.35 | 27 | 29 | 21.3 | 81.7 | SW | 31.7 | 9.2 | Ci.-S. | Cu. WSW, SW | 10.9 | ● ↙° a. p. |
| 26 | 55.72 | 26 | 28.6 | 23.2 | 85.5 | SW | 26.9 | 9 | Ci.-S. | Cu.-N. | 12.5 | ● a. p. ↙° p. |
| 27 | 57.31 | 26.1 | 28.8 | 23.2 | 86.5 | SW | --------- | 7.8 | Ci.-S. | Cu. | 7.6 | ● ↙° ⌒ a. |
| 28 | 58.59 | 27.2 | 29.5 | 25.2 | 83.3 | SW | 16.5 | 3.2 | Ci. | Cu. SW | ------ | ≡ʾ a. |
| 29 | 58 | 27.5 | 29.5 | 25.9 | 81.5 | SW | 20.7 | 4 | Ci. | Cu. | ------ | |
| 30 | 57.54 | 27.6 | 29.6 | 26.4 | 82 | SW | 24.3 | 4.8 | Ci. | Cu. | ------ | d a. ϟ p. |
| 31 | 58.02 | 27.8 | 29.7 | 26.2 | 83.3 | SW | 21.5 | 6.3 | Ci. | Cu. SW | 1.3 | ● a. p. |
| Mean | 757.33 | 26.6 | 29 | 24 | 82.8 | ------------ | 20.4 | 7.9 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 235.3 | |

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[1] Deduced from 4 observations only.

[2] Deduced from 5 observations only.

## METEOROLOGICAL DATA, ETC.—Continued.

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 757.22 | 28 | 31.2 | 24.1 | 78.7 | S | 16.5 | 7.5 | Ci. NNW | Cu.-N. SW | 3.8 | ○°a. ⊓● ↙°ϖ°p. |
| 2 | 57.62 | 27.8 | 30.7 | 25.2 | 82 | S quad. | 10.7 | 9.5 | Ci.-S. | Cu.-N. SW quad. | ------ | ○° a. ↯ p. |
| 3 | 57.46 | 27.7 | 31.6 | 24.8 | 83 | S quad. | 9.6 | 5.8 | A.-Cu. WSW | Cu. WSW, W | ------ | ω° p. |
| 4 | 57.48 | 27.1 | 31 | 23.7 | 84.7 | SE quad. | 7.4 | 6.8 | Ci., Ci.-S. NE, N | Cu., Cu.-N. W | ------ | |
| 5 | 57.47 | 27.1 | 31.2 | 23.9 | 83.5 | Variable | 8 | 6.5 | Ci. E | Cu.-N. | ------ | ≡° a. |
| 6 | 57.82 | 26.8 | 31 | 23 | 83.2 | N, S | 5.2 | 6.5 | Ci.-Cu. N | Cu.-N. | ------ | ≡ a. ϖ° p. |
| 7 | 57.57 | 7 | 32.6 | 22.7 | 80.3 | N | 6.2 | 6.3 | Ci.-S. E | Cu.-N. NW | ------ | ≡° T° a. ω° ↯ p. |
| 8 | 56.25 | 27 | 31.3 | 24.1 | 84.2 | N | 4.6 | 8.3 | Ci.-S. | Cu. | ------ | ≡° a. ↯ a p. ω° p. |
| 9 | 55.40 | 27.5 | 31 | 23.6 | 81.8 | S quad. | 10.5 | 7.3 | A.-Cu. NWbyN | Cu., cu.-N. wbys | ------ | ≡° a. ω p. |
| 10 | 55.30 | 27.6 | 30.9 | 23.9 | 82.5 | SW quad. | 15.1 | 8.7 | Ci.-S. | Cu.-N. SW | 8.4 | ● T ϖ° p. |
| 11 | 56.34 | 27.2 | 30.8 | 23.9 | 80 | S | 15.2 | 8.7 | A.-Cu. S | Cu.-N. | 1.5 | d p. |
| 12 | 57.07 | 27.4 | 31.4 | 24 | 82.5 | S | 15.2 | 8.2 | A.-Cu. E | Cu. WSW | 11.9 | ≡° a. d T ↯ p. |
| 13 | 56.87 | 27.6 | 30.5 | 23.6 | 79.2 | S quad. | 17.3 | 7.8 | A.-Cu. E | Cu. SW, WSW | ------ | p p. |
| 14 | 57.71 | 27.6 | 30.2 | 24.7 | 77 | S quad. | 16.2 | 8.5 | Ci.-S. | Cu.-N. WSW | ------ | |
| 15 | 59.27 | 26.5 | 31.2 | 22.6 | 82.8 | Variable | 7.2 | 4.2 | A.-Cu. W | Cu. | ------ | ≡° a. |
| 16 | 59.50 | 26 | 30.3 | 22.5 | 86 | Variable | 5.4 | 6.7 | Ci. | Cu.-N. NWbyW | ------ | Ω ≡° a. ↯ p. |
| 17 | 58.61 | 25.9 | 30.7 | 22.6 | 85.5 | Variable | 5.8 | 8.2 | Ci.-S., A.-Cu. | Cu.-N. NWbyW | .5 | Ω° ≡° T ↯ ⊓ d |
| 18 | 57.61 | 24.6 | 26.3 | 22.2 | 92.2 | E, S | 3.4 | 10 | Ci.-S. | N. | 15.1 | d a p ⊓ ●° p. |
| 19 | 57.34 | 25.3 | 29.6 | 21.8 | 83.8 | NW quad | 4.6 | 8.7 | A.-Cu. WNW | Cu.-N. | ------ | ≡° d° a. |
| 20 | 57.49 | 25.8 | 31 | 22.4 | 85.5 | NNW, S | 5.3 | 9.7 | A.-Cu. W | Cu.-N. WNW, W | 2.1 | ≡° ○° a. ↯ d p. |
| 21 | 57.78 | 25.6 | 31.1 | 23 | 86 | N | 5 | 9 | Ci.-S. | Cu.-N. W | 7.4 | ≡° a ⊓ ● d p. |
| 22 | 57.03 | 25.7 | 29.2 | 23 | 86.5 | NW quad. | 4.4 | 9.7 | Ci.-S. | Cu.-N. WbyN | 4.1 | ≡° a. ⊓ ● p. |
| 23 | 56.44 | 25.1 | 28.2 | 22.7 | 88 | N, NW | 4 | 10 | Ci.-S. | Cu.-N. WNW | 9.9 | ≡° T d a. ↯ p. |
| 24 | 55.36 | 26.4 | 28.3 | 24 | 76.2 | NW quad. | 10.2 | 10 | Ci.-S. | Cu.-N. W | .5 | d a. p. |
| 25 | 55.42 | 27.7 | 29.5 | 25.8 | 78.2 | SSW | 35.9 | 9.5 | Ci.-S. | Cu.-N. SWbyW | ------ | ≡° a. p p. |
| 26 | 55.94 | 27.6 | 29.2 | 26.6 | 76.7 | SW quad. | 29.1 | 8.7 | Ci.-S. | Cu.-N. SW | ------ | ≡° a. |
| 27 | 57.53 | 27.9 | 29.8 | 25.7 | 78.3 | S quad | 16.8 | 9 | Ci.-S. | Cu.-N. SW | ------ | |
| 28 | 58.45 | 26.9 | 31.7 | 23.8 | 82.8 | SE quad. | 7.1 | 4.2 | Ci. E | Cu.-N. | ------ | ≡° a. ↯ p. |
| 29 | 57.84 | 26.7 | 31.5 | 23.9 | 82.8 | N | 7.3 | 3.8 | Ci. | Cu. S | ------ | Ω ≡° a. ϖ$^2$ p. |
| 30 | 57.25 | 28 | 31.8 | 23.9 | 79.7 | SE quad. | 11.8 | 6.8 | Ci. | Cu. SW, W | ------ | |
| 31 | 57.92 | 28.4 | 31.4 | 26.1 | 79.7 | SE quad. | 13.1 | 8.5 | Ci.-S. | Cu.-N. ssw, wsw | ------ | ≡° a. ○° ↯ p. |
| Mean | 757.24 | 26.9 | 30.5 | 23.8 | 82.4 | ------ | 10.8 | 7.8 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 65.2 | |

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 756.75 | 28.6 | 34 | 24.6 | 67.7 | SW | 1 | 6.5 | Ci. E | Cu. WSW | 0.8 | Ω a. ○° a. p. ●° p. |
| 2 | 57.38 | 27.6 | 31.8 | 23.5 | 79.7 | WSW | .3 | 7.7 | Ci. | Cu.-N. WSW | ------ | Ω$^2$ a. ○° p. |
| 3 | 57.06 | 28.5 | 34 | 24.1 | 77.2 | SE | .7 | 5.5 | Ci. ESE | Cu. WSW | ------ | Ω$^2$ a. |
| 4 | 57.13 | 27.8 | 33.3 | 24 | 83.7 | W quad. | .3 | 7.7 | Ci.-Cu. E | Cu. W | 2 | ● d p. |
| 5 | 57.32 | 28.3 | 33.3 | 24.9 | 81.8 | Variable | .5 | 7 | Ci. E | Cu. W | ------ | Ω$^2$ ○$^2$ a. |
| 6 | 57.57 | 28.8 | 33 | 25 | 73.8 | NW | 1 | 4.5 | Ci., Ci.-S. | Cu. W, WNW | ------ | Ω° a. |
| 7 | 57.26 | 28.6 | 32.4 | 25.5 | 74.7 | NW | 2 | 6.7 | Ci. E | Cu. NW quad. | ------ | ○$^2$ a. p. |
| 8 | 55.80 | 28.1 | 32 | 26.2 | 74.5 | WNW | 2 | 8 | Ci. E | Cu.-N. WNW | ------ | |
| 9 | 55 | 28.4 | 33.6 | 24 | 75.5 | NW quad. | 1 | 7.2 | Ci. E | Cu. W | ------ | ○$^2$ a. p. ω$^2$ p. |
| 10 | 54.60 | 28.1 | 33.5 | 24.2 | 78.7 | NW quad. | .8 | 7 | Ci. E | Cu. W | .5 | ω$^2$ Ω$^2$ a. ○$^2$ a. p. ●° |
| 11 | 55.64 | 27.9 | 34.1 | 23.4 | 74.3 | SW quad. | .7 | 6.8 | Ci.-S. | Cu.-N., Cu. WSW | ------ | ω° ϖ$^2$ Ω$^2$ a. |
| 12 | 56.36 | 28.2 | 34.5 | 24.6 | 74.2 | WNW | .7 | 7.3 | Ci.-S. ESE | Cu. W | ------ | |
| 13 | 56.43 | 27.9 | 33.6 | 23 | 73.2 | WNW | 1 | 7.3 | Ci.-Cu. SE | Cu. WNW | ------ | ϖ$^2$ Ω a. |
| 14 | 57.14 | 28.6 | 33.7 | 25.2 | 67.3 | W | 1.3 | 7.8 | Ci. SE | Cu. WNW, WSW | ------ | ω$^2$ ϖ$^2$ a. |
| 15 | 59.03 | 28.1 | 33.1 | 22.9 | 78.5 | W, SE | .7 | 5.5 | Ci. ENE | Cu. W | ------ | ω$^2$ Ω a |
| 16 | 59.26 | 28.2 | 34.5 | 24.4 | 78.3 | ESE | .5 | 6.3 | Ci. ENE | Cu. W | ------ | ω$^2$ ϖ$^2$ Ω$^2$ a. ○$^2$ a. p. |
| 17 | 58.34 | 27.1 | 32.5 | 24.2 | 80.8 | NW | .7 | 7.8 | Ci., Ci.-Cu. ENE | Cu. W | 3.3 | ω$^2$ ϖ$^2$ a. ⊓ ● ↯ p. |
| 18 | 57.0 | 25 | 26.6 | 23.5 | 88 | N quad. | .7 | 9.3 | ------ | N. N, NW | 8.9 | d ● a. p. |
| 19 | 56.90 | 26.6 | 29.5 | 22.6 | 75.7 | WNW | 1.8 | 7.3 | Ci. E | Cu.-N. NW | ------ | |
| 20 | 57.18 | 26.9 | 31.8 | 22.8 | 79.8 | NW quad. | 1.2 | 7.7 | Ci.-S. SE | Cu. NW | 2.8 | ⌒$^2$ ● p. |
| 21 | 57.32 | 27.1 | 32 | 24.5 | 77.3 | NW | 1.5 | 8.3 | Ci., Ci.-S. SE | Cu.-N. NW | 1.3 | ○$^2$ a. p. d ● p. |
| 22 | 56.70 | 26.7 | 29.5 | 24.3 | 77.2 | NW quad. | 1.7 | 9.3 | Ci. SE | Cu.-N. NW | 3.1 | ● a. |
| 23 | 55.75 | 26.3 | 29.5 | 23.2 | 80.7 | NW quad. | 2 | 9.7 | A.-S. | N., cu.-N. NW quad | 5.8 | ● d a. |
| 24 | 54.53 | 26.8 | 29.8 | 25 | 71.3 | W, WNW | 2.7 | 8.8 | Ci. | Fr.-N. WNW | ------ | ↙° a. ○$^2$ a. p. |
| 25 | 54.66 | 28.6 | 32.7 | 24.6 | 63.7 | SW | 2 | 7.5 | Ci., Ci.-S. E | Cu. WSW | ------ | ○$^2$ p. |
| 26 | 55.50 | 28.3 | 32 | 25.6 | 66.2 | SW quad. | 1.2 | 7.2 | Ci. | Cu.-N. SWbyW | ------ | d a. |
| 27 | 57.32 | 28.4 | 33.8 | 24.8 | 70.7 | SW | .8 | 7.3 | Ci.-S. E | Cu. SW | ------ | |
| 28 | 58.13 | 28 | 34.2 | 23 | 76.5 | Variable | .5 | 4.5 | Ci.-S. NNE | Cu., Fr.-Cu. SW | ------ | Ω$^2$ a. |
| 29 | 57.35 | 28.2 | 34.7 | 23 | 77.7 | WNW | .8 | 2.7 | Ci. | Fr.-Cu. SWbyW | ------ | Ω$^2$ ≡° a. ϖ$^2$ p. |
| 30 | 56.77 | 28.4 | 33.8 | 23.4 | 75.7 | WNW | .8 | 5 | Ci. NE | Cu. SWbyW | ------ | Ω$^2$ ○$^2$ a. |
| 31 | 57.57 | 28.3 | 35 | 23.9 | 79 | W quad. | .7 | 7 | Ci. E | Cu. W | 10.7 | ● p. |
| Mean | 756.80 | 27.8 | 32.6 | 24.1 | 75.9 | ------ | 1.1 | 7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 39.2 | |

UofM

## METEOROLOGICAL DATA, ETC.—Continued.

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 756.12 | 28.2 | 35 | 24 | 77.3 | S | 1.5 | 7.8 | Ci., Ci.-S. | N. SW | ------ | ●°a. ⊤°ϖ°⌣°↯ p. |
| 2 | 56.94 | 26.9 | 32.6 | 24.5 | 85.3 | S quad. | 1.2 | 6 | Ci.-S. | Variable SW | 15.5 | ●◡a. ●°Γ↯ᗤ p. |
| 3 | 57.08 | 27.9 | 35 | 25.1 | 82.1 | S | 1.5 | 6.2 | Ci. | Variable SW | ------ | d° p. |
| 4 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | ------ | |
| 5 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | ------ | |
| 6 | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | ------ | |
| 7 | 57.71 | 27.4 | 33.4 | 23 | 79.2 | SW | 1 | 6.7 | A.-Cu. N | Cu. SW | ------ | ϖ ⌣ p. |
| 8 | 56 | 28.4 | 35.2 | 24.5 | 75.7 | W | 1.5 | 7.5 | A.-Cu. W | N. | ------ | ϖ ⌣ p. |
| 9 | 55.02 | 28.2 | 35.3 | 24.2 | 76 | SW quad. | 1.5 | 7.5 | Ci. | Cu. W | ------ | ⊤° ϖ p. |
| 10 | 54.88 | 26.6 | 33.2 | 23.4 | 81.7 | S | 1.3 | 9 | Ci.-S. | N. W | ------ | ↯ ⊤° ϖ° ⌣° p. |
| 11 | 55.54 | 27.2 | 34.8 | 23.5 | 82.3 | S | 1.3 | 9.2 | Ci.-S. | N. SW | ------ | ⊤ d° p. |
| 12 | 56.77 | 25.5 | 33.4 | 23.6 | 89.2 | S, SW | 1 | 8.8 | Ci. | N. SW | 12.5 | ● ⊤ p. |
| 13 | 56.34 | 26.5 | 32.9 | 22.6 | 83.7 | S quad. | 1.3 | 8.3 | Ci., Ci.-S. | N. SW | 6.6 | d° a. ↯ ● ⊤° p. |
| 14 | 56.88 | 26.8 | 33.2 | 23.4 | 82 | S | 1.3 | 8.7 | Ci.-S. | N. SW | 2.3 | ● a. |
| 15 | 59 | 27.1 | 33.9 | 23.6 | 80.8 | Variable | 1 | 6.3 | Ci. | Cu. SW | ------ | ϖ a. ⊤° p. |
| 16 | 59.32 | 27.3 | 33 | 23.7 | 83.5 | Variable | 1 | 7 | Ci.-S. | Fr.-Cu. SW | ------ | Ω° a ⊕°○°↯⊤°p. |
| 17 | 58.73 | 26.2 | 33.8 | 23.1 | 83.7 | Variable | .5 | 8.3 | Ci.-S. | N. SE | ------ | ↯ p. |
| 18 | 57.44 | 25.3 | 29.8 | 21.9 | 88.2 | SE quad. | .8 | 9.7 | Ci.-S. | N. | 21.9 | d° a. ● Γ↯ p. |
| 19 | 57.40 | 25.7 | 30.8 | 21.8 | 82.2 | SSW | 1 | 9.5 | Ci.-S. | N. NW | ------ | |
| 20 | 57.52 | 26.6 | 33.6 | 23.8 | 80.8 | Variable | 1.2 | 7.3 | Ci. | N., Cu. SE, SW | ---- | ⊤° p. |
| 21 | 57.78 | 25.5 | 32.3 | 23.1 | 83.3 | S, SW | .8 | 7.2 | Ci.-S. | N. SW | .3 | ●° a. ⊤° p. |
| 22 | 57.04 | 26.6 | 33.6 | 23.5 | 81.8 | SW quad. | 1.3 | 9 | Ci.-S. | N. S, WSW | ------ | ↯ p. |
| 23 | 56.71 | 26.4 | 32.4 | 24 | 78.2 | W quad. | 1.3 | 9.7 | Ci.-S. | Cu.,Fr.-N SW,WNW | 1.8 | ↯ p. |
| 24 | 55.90 | 24.9 | 29.7 | 22.4 | 86 | W quad. | 1.7 | 10 | Ci.-S. | N. W | 4.3 | ●° a. p. |
| 25 | 54.75 | 26.4 | 32.6 | 23.5 | 82.5 | SW | 1.3 | 8.7 | Ci.-S. | N. SW quad. | 2.1 | ●° a. |
| 26 | 55.18 | 27.1 | 31 | 22.9 | 80.3 | S quad. | 1.5 | 6.8 | Ci., Ci.-S. | N. SW | ------ | Ω° a. d° p. |
| 27 | 56.91 | 26.1 | 33.5 | 24.2 | 88 | S quad. | 1 | 7 | Ci. | N. SW | 41.6 | ○° a ● a. p. ⌣ ⊤° |
| 28 | 58.34 | 27.3 | 33.4 | 24.2 | 83 | S | 1 | 4.7 | Ci., Ci.-S. | N. SW | 3.6 | ● ↯° p. |
| 29 | 57.64 | 27.9 | 33.8 | 24.2 | 79.3 | W quad. | 1.2 | 3.2 | Ci. | Cu. SW | ------ | ⊤° p. |
| 30 | 57.08 | 28 | 34.4 | 24.4 | 78.2 | SW quad. | 1.2 | 5.3 | Ci. N | Cu. SW | ------ | ⊕° ☽° a. p. ϖ°↯p |
| 31 | 57.42 | 27.8 | 33.6 | 24.9 | 82.5 | S | 1.2 | 6.8 | Ci.-S. | N. SW | .5 | ●° ⌣ p. |
| Mean | 756.91 | 26.8 | 33.3 | 23.6 | 82 | ------------ | 1.2 | 7.6 | ---------------- | ---------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 113 | |

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 756.46 | 28.6 | 31.2 | 27 | 76.3 | S quad. | 26.4 | 6.8 | Ci.-S. | S.-Cu. SW | ------ | |
| 2 | 57.20 | 28.2 | 31.6 | 26.8 | 79.7 | SW quad. | 16.6 | 7.2 | Ci.-S. | S.-Cu. SW | 1.5 | p° ⌣ p. |
| 3 | 57.14 | 28.5 | 32.4 | 26.7 | 79.2 | SW | 16.6 | 5.2 | Ci. | S.-Cu. SW | ------ | ϖ p. |
| 4 | 57.14 | 28.9 | 32.7 | 27 | 78.3 | SW | 14.2 | 5.5 | Ci. NE | S.-Cu. SW | ------ | ⌣ p. |
| 5 | 57.16 | 28.8 | 34 | 25.2 | 79.3 | SW | 9.5 | 7.2 | Ci.-S. | S.-Cu. SW | ------ | ⌣ ᗤ p. |
| 6 | 57.58 | 27.6 | 33.4 | 24.2 | 84.3 | SW | 8.6 | 7 | A.-Cu. NW | S.-Cu. WSW | ------ | ϖ p. |
| 7 | 57.24 | 28.1 | 32 | 24.7 | 82.7 | W quad. | 8.4 | 6.3 | Ci. E | S.-Cu. W | 1.3 | d ↯ p. |
| 8 | 55.84 | 27.6 | 31 | 25.2 | 82.8 | W | 9.2 | 9.7 | Ci.-S. | S.-Cu. WNW | ------ | d ⌣ p. |
| 9 | 54.82 | 28.6 | 31.9 | 26.9 | 78.8 | WSW | 16.6 | 8 | Ci.-S. | S.-Cu. W | ------ | ⌣ p. |
| 10 | 54.62 | 28.3 | 30.9 | 26.8 | 81.3 | SW | 23.1 | 7.8 | A.-Cu. NW by W | S.-Cu. SW | ------ | ϖ a. |
| 11 | 55.52 | 28.5 | 32 | 26.8 | 76.7 | SW | 20.5 | 7.8 | A.-Cu. | S.-Cu. SW | ------ | |
| 12 | 56.44 | 28.7 | 32.9 | 26.7 | 77.8 | SW, WSW | 19.6 | 7.5 | Ci.-S. ENE | S.-Cu. SW | ------ | ᗤ a. d ↯ p. |
| 13 | 56.35 | 28.2 | 31.4 | 26.5 | 79.2 | WSW, SW | 19.4 | 7.8 | A.-Cu. ESE | S.-Cu. WSW | ------ | |
| 14 | 57.02 | 28.4 | 31.4 | 26.6 | 76.8 | SW | 23.9 | 7.8 | Ci.-S. ENE | S.-Cu. SW | ------ | ⌣ a. |
| 15 | 58.85 | 28.6 | 33.1 | 24.4 | 76.8 | SW | 13.8 | 5 | Ci.-S. | S.-Cu. WSW | ------ | ᗤ a. |
| 16 | 59.27 | 27.2 | 32.2 | 23.3 | 83 | S quad. | 6 | 6.5 | Ci.-S. ENE | S.-Cu. W | ------ | ⌣ a. |
| 17 | 58.12 | 27.4 | 33.1 | 24 | 83.3 | W quad. | 8.7 | 7.7 | Ci.-S., A.-Cu. | S.-Cu. W | 4.6 | d ↯ p. |
| 18 | 57.11 | 25 | 27.5 | 21.9 | 88.3 | WNW | 10.2 | 9.8 | A.-Cu. | N. W | 68.8 | ↯ ●: Γ↯ a. ● d p. |
| 19 | 56.88 | 26.6 | 30.7 | 24 | 82.2 | W | 12.2 | 9 | A.-Cu. NW | S.-Cu. W | ------ | d° a. |
| 20 | 57.08 | 26 | 29.5 | 24.1 | 88 | W quad. | 11.2 | 8.5 | A.-Cu. | S.-Cu. W | 42.2 | ● a. p. ⌒ d° ↯ p. |
| 21 | 57.31 | 27.2 | 31 | 25.2 | 82 | SW | 11 | 8.5 | A.-Cu. NW | S.-Cu. W | 8.4 | ● ⊤ d° p. |
| 22 | 56.65 | 26.4 | 29.5 | 24.3 | 83.7 | W | 4.8 | 9.7 | A.-Cu., Ci.-S. | S.-Cu. W | ------ | d a. ↯ p. |
| 23 | 55.80 | 26.3 | 29.9 | 23.7 | 84.3 | W | 12 | 9.3 | Ci.-S. | S.-Cu. W | 7.1 | d° ↯ p. |
| 24 | 54.24 | 26.3 | 27.7 | 23.5 | 80.3 | W | 25.3 | 10 | A.-Cu. | S.-Cu. W | 2.3 | ●° a. |
| 25 | 54.06 | 26.8 | 28.2 | 25 | 83.8 | SSW | 33.8 | 9.2 | A.-Cu. | N., S.-Cu. SW | 11 | ↙° ● a. p. |
| 26 | 54.96 | 27.5 | 29.4 | 25.3 | 80.2 | SSW | 35 | 7.7 | Ci.-S. | S.-Cu. SW | 1.5 | p. ↙° a. |
| 27 | 57.03 | 27.8 | 30.6 | 26.7 | 80.2 | S quad. | -------- | 7.2 | Ci.-S. | S.-Cu. SW | ------ | |
| 28 | 58.18 | 28.8 | 32.7 | 26.4 | 76.2 | SW | 12.4 | 5.2 | Ci.-S. ENE | S.-Cu. WSW | ------ | |
| 29 | 57.47 | 28.6 | 32.2 | 26.5 | 78.3 | SW | 15.2 | 3.2 | Ci., Ci.-S. | S.-Cu. SW, WSW | ------ | |
| 30 | 56.86 | 28.9 | 31.8 | 27 | 79 | SW quad. | 17.3 | 6 | Ci.-S. | S.-Cu. W | ------ | |
| 31 | 57.44 | 29 | 33.2 | 27.4 | 76.2 | SW | -------- | 7 | Ci.-S. NE | S.-Cu. SW | ------ | d ↯ p. |
| Mean | 756.70 | 27.8 | 31.3 | 25.5 | 80.6 | ------------ | 15.9 | 7.5 | ---------------- | ---------------- | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 148.7 | |

MoU

## METEOROLOGICAL DATA, ETC.—Continued.

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0–10.* |  |  | *mm.* |  |
| 1 | 755.59 | 27.5 | 31.7 | 24 1 | 80.7 | SW | 16 | 8.8 | A.-Cu. SW | Cu. SW | 0.8 | ⚡ d p. |
| 2 | 56 45 | 27 | 30 | 24.3 | 86 | SW | 11.6 | 8 | Ci.-S. | Cu. WSW | 1 | d a. |
| 3 | 56.48 | 27.8 | 31.6 | 24.3 | 81.2 | SW | 13.6 | 3 | Ci. | Cu. WSW | ------ | d a. ⚡ ⍦ p. |
| 4 | 56.69 | 28.1 | 32.2 | 24 | 77.7 | SW | 13.6 | 2.7 | Ci. | Cu. WSW | ------ | ⍦ p. |
| 5 | 56.80 | 28.2 | 32.5 | 24.4 | 80.3 | SW | 13.2 | 3.5 | Ci. | Cu. WSW, W | ------ | ⍦ p. |
| 6 | 57.26 | 28.3 | 33.2 | 24.1 | 80.8 | SW | 14.4 | 3.2 | Ci. | Cu. WSW | ------ | ⍦ p. |
| 7 | 56.89 | 28 | 32.4 | 24.9 | 81.8 | WSW | 17.8 | 6.2 | A.-Cu. W | Cu. NW | ------ | ⚡° p. |
| 8 | 55.40 | 27.6 | 30.1 | 25 | 87.2 | WSW | 14.4 | 8.5 | Ci.-S. | Cu. NW. WNW | ------ | ⚡° p. |
| 9 | 54.06 | 28.1 | 32 | 24.6 | 88.5 | SW | 20.6 | 9.2 | Ci.-S. NE | Cu. WSW, W | ------ | ⍦ p. |
| 10 | 53.57 | 28.5 | 32.2 | 26.2 | 86.8 | SW | 18.4 | 8.7 | Ci.-S. | Cu. WSW | .5 | ⍦ a. |
| 11 | 54.77 | 27.1 | 30.2 | 25 | 91.5 | SW | 16.3 | 7.2 | Ci.-S. | Cu.-N., Cu. WSW | 1.1 | ●° a. p. |
| 12 | 55.70 | 27.5 | 31.9 | 24.6 | 89.5 | SW | 15.6 | 5.5 | Ci. | Cu.-N. WSW | 1.5 | ●° p. |
| 13 | 55.44 | 27.4 | 32.2 | 23.9 | 88.3 | SW | 16 | 8.8 | Ci.-S. | Cu.-N. WSW | 1.3 | ●° a p. ⚡ p. |
| 14 | 56.24 | 27.4 | 30.7 | 24.1 | 87.2 | SW | 17.3 | 7.2 | A.-Cu. S | Cu. WSW | 2 | ●° ⚡° p. |
| 15 | 58.22 | 27.6 | 31.5 | 24 | 83.8 | SW | 13.6 | 3.8 | Ci. E | Cu. WSW | ------ | ⚡° p. |
| 16 | 58.76 | 27.6 | 32.9 | 23 | 85.8 | SW quad. | 10.3 | 7.7 | Ci.-S. E | Cu. WSW | ------ | ⚡° p. |
| 17 | 57.73 | 27.9 | 32.5 | 24.4 | 85.3 | SW | 12.6 | 6.5 | Ci.-S. | Cu. W | 2.8 | ⛈ ●° p. |
| 18 | 56.82 | 24 | 26.1 | 21.1 | 95 2 | WSW | 13.2 | 9.8 | Ci.-S. | N. NW | 41.3 | ● a. p. |
| 19 | 56.52 | 25.4 | 28 | 21.6? | 90.5 | SW | 11.5 | 8.8 | Ci.-S. | N. W | 5.3 | d a. |
| 20 | 56.73 | 26 | 31.1 | 21.7 | 87.3 | SW quad. | 12.4 | 8 | Ci.-S. | N. WSW | .5 | ● a. ●° ⚡ p. |
| 21 | 57 | 26.5 | 31 | 22.7 | 84.3 | SW quad. | 11.1 | 8 | A.-Cu. W | Cu., cu.-n. w. wsw | 45.8 | ●$^2$ ⚡ p. d° a. p. |
| 22 | 56.58 | 25.9 | 30.3 | 22.6 | 89.8 | SW | 6.4 | 9.2 | Ci.-S. | n., cu.-n. sw, wsw | 18.5 | ● a p. ⛈° p. |
| 23 | 55.75 | 25.9 | 31.5 | 22.5 | 88 | SW quad. | 10.7 | 8.3 | Ci.-S. | Cu. W | 16.5 | ⚡° a ● ⊤ ⚡ p. |
| 24 | 53.79 | 25.3 | 26.6 | 23.9 | 87.7 | WSW | 14.6 | 10 | Ci.-S. | N. WNW | .8 | d° a. p. |
| 25 | 52.79 | 26 | 28.4 | 23.9 | 88.2 | SW | --------- | 10 | Ci.-S. | Fr.-N. W | 5.9 | ● a. p. |
| 26 | 53.89 | 27.2 | 30.2 | 24.5 | 83.5 | SW | 18.5 | 7.2 | Ci.-S. | Cu.-N. WSW | ------ | ●° a. |
| 27 | 56.37 | 27.4 | 31.5 | 25 | 84.3 | SW | 10.9 | 4.2 | Ci. | Cu. SW | ------ | ⚡° p. |
| 28 | 57.62 | 27.3 | 31.7 | 23.9 | 84 | SW | 13.7 | 2.7 | Ci. ESE | Cu. WSW | ------ | ⚡° p. |
| 29 | 56.73 | 27.7 | 32.1 | 23.9 | 81.3 | SW quad. | 18.2 | 2.2 | Ci. ENE | Cu. WSW | ------ | ⚡° p. |
| 30 | 56.16 | 28.1 | 32 | 24.4 | 81.2 | SW | 17.6 | 3 | Ci. | Cu. W, WSW | ------ | ◯ a. ⍦ p, |
| 31 | 56.45 | 27.7 | 31 | 25.4 | 83 | SW | 16.7 | 5 | Ci.-S. | Cu.-N. WSW | ------ | ⚡° p. |
| Mean | 756.10 | 27.2 | 31 | 23.9 | 85.5 | ------------ | 14.4 | 6.6 | ------------------ | ------------------ | ------ |  |
| Total | ------- | ------ | ------ | ------ | ------- | ------------ | --------- | ---------- | ------------------ | ------------------ | 145.6 |  |

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.74 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0–10.* |  |  | *mm.* |  |
| 1 | 754.24 | 26.9 | 30 | 24.4 | 81.5 | SW | 12.4 | 10 | Ci.-S. | S.-Cu. SW | 2 | d$^2$ a. p. |
| 2 | 55.43 | 27.4 | 31.2 | 24 | 81 | SW quad. | 8.2 | 8 | A.-Cu. SW | S.-Cu. SW | .5 | ●° a. ∞$^2$ p. |
| 3 | 55.89 | 27.8 | 32.4 | 23.4 | 78.7 | SW | 9.1 | 5 | A.-Cu. SW | Variable SW | 4.6 | d° ●° a. ∞° ⚡° p. |
| 4 | 56.21 | 27.9 | 32.7 | 23.3 | 76.7 | S, SW | 8.6 | 3.5 | Ci. E | Cu. SW | ------ | d$^2$ p. |
| 5 | 56.59 | 27.5 | 32.4 | 22.3 | 76.3 | SSW, SW | 9.6 | 5.3 | Ci.-S. E | Cu. SW | ------ | ◯$^2$ a. ∞$^2$ p. |
| 6 | 57.28 | 27.4 | 33 | 22.2 | 79.8 | SW | 8.5 | 5.3 | Ci. E | Cu. W, WNW | ------ | ⍦° ∞$^2$ p. |
| 7 | 57.10 | 27.5 | 33.2 | 21.9 | 78.3 | SW | 7.2 | 5.7 | Ci. E | Cu.-N. WNW | ------ | ∞° a. d° ∞$^2$ ⍦° p. |
| 8 | 55.27 | 27.7 | 32.9 | 22.2 | 77 | SW quad. | 8.3 | 7 | Ci. NE | S.-Cu. WNW, NW | ------ | ∞° a. ∞$^2$ ⍦$^2$ p. |
| 9 | 53.73 | 29 | 33.2 | 24.8 | 69.3 | SW quad. | 18.4 | 9.3 | A.-Cu. E | Cu. W | ------ | ◯$^2$ a. d° p. |
| 10 | 53 16 | 28.7 | 33.7 | 26.4 | 74.3 | SW quad. | 17.4 | 9.7 | A.-Cu. W | S.-Cu. W | ------ | d° ∞° p. |
| 11 | 53.96 | 28.8 | 32.7 | 26 | 73.3 | SW quad. | 19.4 | 8.5 | A.-Cu. W | S.-Cu. W | ------ | ⛈ ∞° p. |
| 12 | 55.37 | 28.6 | 31 6 | 25.4 | 74.8 | SW | 14.1 | 8.3 | Ci.-S. | S.-Cu. SW | ------ | ∞° d$^2$ a. d° a. p. |
| 13 | 54.98 | 27.2 | 30.7 | 24.5 | 76.5 | SW | 15 | 9.8 | A.-Cu. SW | S.-Cu. SW | ------ | d° p. |
| 14 | 55.29 | 27.5 | 32.2 | 24.5 | 78.3 | SW | 13.5 | 9 | A.-Cu. SW | S.-Cu. SW | 1 | d° a. p. ● p. |
| 15 | 57 62 | 28 | 32 | 23.4 | 72.8 | SW | 10 2 | 9.8 | A.-Cu. S | S.-Cu. SW | ------ | ⚡ p. |
| 16 | 58.64 | 28 | 32.6 | 22.9 | 75.8 | SW | 8.7 | 8.8 | Ci.-S. E | Cu., S. SW | ------ | ∞° ◯° a. |
| 17 | 57.93 | 27.1 | 33.4 | 21.7 | 80 | SW | --------- | 5.3 | Ci. ENE, E | cu s.-cu. w, nw | ------ | ∞$^2$◯°a ⛈°d$^2$⚡ p. |
| 18 | 56.65 | 25.1 | 30.8 | 22.2 | 84.3 | SW | 9.3 | 10 | Ci.-S. | S.-Cu. W | 21.3 | ● ⛈ a. d$^2$ ●° p. |
| 19 | 56.16 | 26 | 29.5 | 21.9 | 82 | SW | 7.9 | 10 | A.-Cu. NE | S.-Cu. SW | 5.1 | d$^2$ ● ⚡ p. |
| 20 | 56.57 | 25.6 | 29.8 | 22 | 86.2 | SW | 8.6 | 8.3 | A.-Cu. SSW | S. W | .3 | ●° p. |
| 21 | 56 82 | 26.4 | 32.4 | 20.9 | 75.2 | SW | 12.7 | 5.2 | Ci E, SE | Cu. SW. W | ------ | ◯° a. ◯$^2$ ⚡ p. |
| 22 | 56.49 | 25.9 | 32.5 | 21.1 | 79.3 | SW | 10.2 | 6.5 | Ci., A.-Cu. E, SE | fr.-cu., s.-cu. wsw, nw | ------ | d$^2$ ⚡° p. |
| 23 | 56.24 | 26 5 | 31.4 | 22 | 83.7 | SW, N | --------- | 9.3 | A.-Cu. E | S.-Cu. NW | ------ | ◯° a ⚡° ⚡ p. |
| 24 | 54.81 | 26.4 | 30.3 | 22.8 | 80 | W quad. | 9.1 | 10 | Ci.-S. | S. NW quad. | 1.3 | d° ●° d$^2$ p. |
| 25 | 52.41 | 26.5 | 29.9 | 23.4 | 75.8 | SW | 14.5 | 10 | Ci.-S. | S. W | ------ | d° a. ⚡° p. |
| 26 | 52.84 | 28.2 | 32.7 | 24.9 | 69.7 | SW | 25.6 | 8.3 | Ci. N | S.-Cu. SW | ------ | d° ◯° a. ↙° p. |
| 27 | 55.46 | 28.5 | 32.7 | 25.2 | 73.8 | SW | 10.7 | 8.8 | Ci.-S. | S.-Cu. SW, WSW | ------ | ◯$^2$ a. |
| 28 | 57 17 | 28.6 | 33.9 | 24.4 | 71.5 | SW | 10.7 | 4.3 | Ci. NE | Cu., S. W | ------ |  |
| 29 | 56.34 | 29.2 | 34.2 | 25.5 | 65.2 | SW | 20.2 | 2.7 | Ci. EbyN | Cu. W | ------ | ⚡° p. |
| 30 | 55.45 | 29.3 | 33.7 | 26 | 67.7 | SW quad. | 21.4 | 7 | A.-Cu. W | S. W | ------ | ⚡° ◯° a. d$^2$ p. |
| 31 | 55.76 | 29.4 | 34.3 | 25.9 | 66.7 | SW | 21.4 | 7.2 | Ci. NE | Cu. WSW | ------ | ◯$^2$ a. ⍦$^2$ ∞$^2$ p. |
| Mean | 755.74 | 27.6 | 32.2 | 23.6 | 76.3 | ------------ | 12.8 | 7.6 | ------------------ | ------------------ | ------ |  |
| Total | ------- | ------ | ------ | ------ | ------- | ------------ | --------- | ---------- | ------------------ | ------------------ | 36.1 |  |

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## METEOROLOGICAL DATA, ETC.—Continued.

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 754.07 | 27.6 | 31.7 | 25.4 | 79.5 | SSW | 13 | 10 | Ci.-S. | Cu. SSW | ------ | d° a. p. <° p. |
| 2 | 55.53 | 27.4 | 32.7 | 25 | 84.7 | SSW | 7.2 | 9 | Ci.-S. | Cu. SSW | 2.1 | ●° d Ω p. |
| 3 | 55.91 | 28.7 | 31.3 | 24 | 77.3 | SSW, SW | 8.6 | 4.5 | Ci. | Cu. SW quad. | ------ | Ω° a. T <° p. |
| 4 | 56.23 | 28.6 | 34.5 | 24.4 | 79.5 | SW | 7.1 | 6.5 | Ci. | Cu. WSW | ------ | Ω° a. |
| 5 | 56.56 | 28.5 | 34.3 | 24.5 | 79.5 | SW | 6.4 | 5.7 | Ci., Ci.-S. | Cu. SW, W | ------ | Ω° ○° a. T ⊍ p. |
| 6 | 57.11 | 29 | 35 | 24 | 74.5 | SW, WSW | 8.1 | 3.2 | Ci. | Cu. W | ------ | Ω a. |
| 7 | 56.95 | 28.9 | 34.1 | 24.6 | 72.7 | SW | 8.4 | 4.5 | Ci., Ci.-Cu. | Cu. W | ------ | Ω° a. ⊍ p. |
| 8 | 55.04 | 28.5 | 34.3 | 25.5 | 78.2 | SW | 11.3 | 8.5 | A.-Cu. NNE | Cu. W | ------ | ⊕° a. p. ⊍° p. |
| 9 | 53.54 | 27.7 | 34.8 | 25 | 82 | SW | 13.6 | 9.3 | Ci.-S. | Cu. WSW | 3.3 | ⊍ a. p. ● d p. |
| 10 | 52.73 | 28.9 | 34.7 | 26.4 | 76.2 | SW | 15.4 | 9.7 | Ci.-S. | Cu. WSW, W | ------ | ⊍ p. |
| 11 | 53.82 | 29.3 | 34.7 | 26.5 | 74 | SW | 14.8 | 9.2 | Ci.-S. | Cu. SW | ------ | ⊍ p. |
| 12 | 55.07 | 28.6 | 33.9 | 25 | 78 | SW | 7.9 | 7.7 | Ci.-S. | Cu. SW | ------ | Ω° d° p a. ⊍° p. |
| 13 | 54.78 | 28.1 | 33.3 | 25 | 77 | SW | 11.5 | 10 | Ci.-S. | Cu. SW | ------ | ⊖ T ◌ a. |
| 14 | 55.18 | 28.4 | 31.3 | 25.5 | 75.8 | SW | 12.9 | 8.3 | Ci.-S., A.-Cu. | Cu. SW | .5 | ●° p. |
| 15 | 57.46 | 28.2 | 34.3 | 25 | 76.8 | SW | 10.6 | 8 | Ci.-S. | Cu. SW | ------ | d° a. ◌ p. |
| 16 | 58.63 | 28.4 | 34.7 | 24 | 78.5 | SW | 7.1 | 7.2 | Ci.-S. | Cu. W | ------ | Ω° ◌ a. ⊕ < p. |
| 17 | 57.69 | 28.8 | 35 | 24.2 | 73.2 | SW | 11.3 | 5.2 | Ci. | Cu. WSW | ------ | Ω° a. < p. |
| 18 | 56.32 | 26 | 30.3 | 23.4 | 86.7 | SW | 9.7 | 10 | Ci.-S. | Cu. W, WNW | 10.4 | ⊏a. ● d p. |
| 19 | 56.05 | 25.9 | 28.8 | 23 | 85.3 | SW | 9.4 | 10 | Ci.-S. | Cu. WSW | .5 | d p. |
| 20 | 56.51 | 26.7 | 32.3 | 23.4 | 81 | SW | 10 | 8.7 | Ci.-S. | Cu. WSW | ------ | < p. |
| 21 | 56.70 | 27.8 | 34.2 | 22.7 | 75.8 | SW | 7.2 | 4.8 | Ci. | Cu. WSW | ------ | Ω a. < p. |
| 22 | 56.57 | 27.5 | 33.7 | 22.7 | 77.8 | SW, NNW | 5.5 | 6.5 | Ci.-S. | Cu. WSW, W | ------ | Ω° a. < p. |
| 23 | 56.07 | 27.1 | 32.3 | 23.5 | 84.8 | NW, quad. | 6 | 8.8 | Ci.-S. | Cu. NW quad. | 3.1 | < p. |
| 24 | 54.58 | 25.2 | 26.6 | 22 | 91.3 | W quad. | 9.6 | 10 | Ci.-S. | Fr.-N. NW quad. | 71.5 | T ●² a. d p. |
| 25 | 51.57 | 25.8 | 28.8 | 23.9 | 86 | WSW, SW | 18.3 | 10 | Ci.-S. | Cu. WSW | .8 | ●° d a. |
| 26 | 52.54 | 28.1 | 33.3 | 25.5 | 74.5 | SW | 18.8 | 8.2 | Ci.-S. | Cu. SW | ------ | ⊕ p. |
| 27 | 55.34 | 27.9 | 33.4 | 23.9 | 82.2 | SW | 8.8 | 7.2 | Ci.-S. | Cu. SW | ------ | Ω ◌ a. |
| 28 | 56.98 | 28.8 | 31.8 | 25 | 79.5 | SW | 9.1 | 4.7 | Ci. | Cu. SW | ------ | Ω° a. |
| 29 | 56.12 | 28.6 | 34.3 | 24.8 | 75.7 | SW | 13.2 | 2.3 | Ci. | Cu. SW | ------ | Ω a. <° p. |
| 30 | 55.40 | 28.6 | 33.6 | 25.2 | 76.5 | SW | 12.8 | 8.8 | Ci. NE | Cu. SW | ------ | p a. p. |
| 31 | 55.50 | 29 | 34.6 | 25.1 | 74.8 | SW | 13.7 | 8.2 | Ci., Ci.-S. | Cu. SW | ------ | ⊍ p. |
| Mean | 755.57 | 28 | 33.3 | 24.5 | 79 | ------------ | 10.6 | 7.6 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 92.2 | |

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 753.70 | 25.3 | 28.3 | 24 | 92.9 | SW | 1.3 | 10 | Ci.-S. | N. SW | 10.4 | d a. p. ● p. |
| 2 | 54.98 | 26.1 | 29.7 | 23.5 | 90.8 | SW | 3.3 | 9.7 | Ci.-S. | N. SW | 12.5 | d a. ● p. |
| 3 | 55.64 | 26.8 | 30.8 | 24.4 | 89.5 | SSW | 4 | 9 | A.-Cu. WNW | N. S quad. | 4.6 | d a. p T < ↙° p. |
| 4 | 56.12 | 27.4 | 31.7 | 2 .4 | 86.7 | S | 2.7 | 7.3 | A.-Cu. W | Cu. SSW | 1 | d ↙° p. |
| 5 | 56.66 | 28.1 | 32.4 | 24.8 | 83.2 | S quad. | 2.5 | 6.5 | A.-Cu. W | Cu. SW | ------ | Ω a. p. < p. |
| 6 | 57.68 | 28.3 | 32.7 | 24.4 | 81.2 | SSW | 2 | 7.2 | Ci. NE | Cu. SW | ------ | Ω a. p. ⊍° p. |
| 7 | 57.64 | 27.5 | 33.6 | 24.5 | 85.7 | SSW | 1.2 | 6.8 | A.-Cu. W | Cu. SW, W | 14.5 | Ω a. ● ⌈↘ p. |
| 8 | 56.10 | 27.1 | 32.6 | 23.9 | 88.5 | WSW | 1.2 | 7.3 | A.-Cu. NE | N. W | 21.3 | ● ⌈↘ ⌒ ⊖ ⊍° p. |
| 9 | 54.50 | 27 | 32.4 | 24 | 88.3 | W quad. | 1.3 | 9.7 | Ci.-S. | N. W quad. | 4.3 | ≡ ◌² a. ● < p. |
| 10 | 53.51 | 25.8 | 32.7 | 24.5 | 93.5 | SW | 1.2 | 9.8 | A.-Cu. NW | N. W | 11.2 | ● ⌈↘ < ⊖ p. |
| 11 | 54.19 | 26.3 | 31.2 | 24.4 | 91.7 | SW | 1.2 | 9.7 | Ci.-S. N | N. WSW | 17 | ≡° a. ● T a. p. |
| 12 | 55.22 | 26.8 | 32.7 | 24.5 | 88.7 | SW | 1.2 | 9.3 | Ci.-S. N | N. SW | 2 | ● a p < p. |
| 13 | 54.98 | 26.1 | 30.5 | 24.4 | 91.5 | SSW | 2.5 | 9.7 | A.-Cu. NW | N. SSW | 3.1 | ≡° a. d p p. |
| 14 | 55.34 | 26.7 | 31.3 | 24 | 88.7 | SSW | 3.7 | 8.7 | Ci. NW | N. SSW | 5.3 | d a. ● p ↙° p. |
| 15 | 57.95 | 25.3 | 30.6 | 23.4 | 92 | SSW | 2.7 | 9.2 | Ci.-S. | N. SSW, SW | 1 | d a. p. |
| 16 | 58.92 | 27.8 | 33 | 23.8 | 82.8 | SSW | 2 | 6.2 | Ci. NE | Cu. SW, WSW | ------ | Ω ⊍ a. ○ p. |
| 17 | 58.39 | 25.8 | 32.2 | 23.1 | 89.3 | SW | 1.5 | 6.7 | A.-Cu. WSW | Cu. W | 19.3 | Ω² ≡° a. ● T⌒²p. |
| 18 | 57.17 | 24.8 | 30.6 | 22.8 | 92.7 | WSW | 1.5 | 8.2 | A.-Cu. WSW | N. W | 19.6 | ≡° ●² a. T p. |
| 19 | 56.68 | 25.2 | 31 | 22.5 | 90.8 | SW quad. | 1.3 | 8.7 | Ci. NE | N. W | .8 | d p. |
| 20 | 57.09 | 25.4 | 31 | 23.5 | 89 | SSW | 1.8 | 8.8 | A.-Cu. W | N., Cu. SW | 1.3 | Ω a d p. |
| 21 | 57.19 | 26.2 | 31.2 | 22 | 85.3 | S | 2.2 | 5.2 | Ci. NE | Cu. S | ------ | Ω a. d ° < p. |
| 22 | 56.76 | [illegible]7 | 32.4 | 22 | 81.8 | S | 1.8 | 5 | A.-Cu. E | Cu. S | ------ | Ω² a. d ° p. |
| 23 | 56.51 | 26.5 | 33.2 | 23 | 87.5 | Variable | 1.2 | 6.8 | Ci.-S. NE, E | Cu. S, W | 1.5 | Ω ∞ a. p p. |
| 24 | 55.99 | 25.8 | 30 | 23.8 | 89.7 | NNW | 1.7 | 9.7 | A.-S. ESE | N. NNW | 9.1 | ⊕° d p. |
| 25 | 53.33 | 24.9 | 28.4 | 22.8 | 90.7 | W, NW | 1.3 | 10 | Ci.-S. | N. WNW | 3 | d a. p. |
| 26 | 52.93 | 26 | 30.2 | 23.5 | 89.8 | SW | 3 | 8.7 | Ci.-S. | N. W quad. | 8.9 | Ω d a. ● p. |
| 27 | 55.51 | 27.6 | 32.2 | 24.1 | 83.3 | SW | 2.3 | 7 | Ci. NNW | Cu. SW | .5 | Ω a. ◌² p. |
| 28 | 57.41 | 27.3 | 32.2 | 24.8 | 87.8 | SW | 2.3 | 7.5 | A.-Cu. W | N. SW | 1.5 | d ● a T p. |
| 29 | 56.84 | 27.4 | 32 | 24.5 | 88 | WSW | 1.8 | 7.2 | A.-Cu. W | N. W | 8.9 | Ω a. ● d° T p. |
| 30 | 56.36 | 24.4 | 28.9 | 22.8 | 95.8 | WSW | 1.2 | 9.2 | Ci.-S. NE | N. W | 26.7 | ⌈↘ a. ● a p. T° p. |
| 31 | 55.71 | 26 | 31 | 22.4 | 89.8 | SW | 2.5 | 7.8 | Ci.-S. NE | N., Cu. W quad. | 1.5 | d a. ● ↙° p. |
| Mean | 756.03 | 26.4 | 31.4 | 23.7 | 88.6 | ------------ | 2 | 8.1 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 210.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 753.68 | 24.2 | 25.6 | 23.3 | 98 | W | 4.9 | 10 | ---------- | N. NW, W | 87.1 | ● a. p. |
| 2 | 54.64 | 25.6 | 31.2 | 22.7 | 92.5 | SE quad. | 10.6 | 9.8 | ---------- | N. SW | 24.7 | ● a. d p ↯ p. |
| 3 | 55.19 | 25.9 | 29.4 | 23.5 | 95.5 | SE | 7.3 | 9.8 | A.-Cu. | N. SW | 17.4 | ↯ ⊤° ● a. d² p. |
| 4 | 55.60 | 27.1 | 31.4 | 24.4 | 88.7 | SE | 10.6 | 9 | Ci.-S. | S.-Cu., N. SW | 1.8 | ●°d°a. d ↯ ⌓° p. |
| 5 | 56.20 | 28.1 | 33.4 | 25 | 81.7 | SE quad. | 8.9 | 9.5 | Ci. | N. SW | ------ | d° ⊂ a. |
| 6 | 57.25 | 28.3 | 33.4 | 24.8 | 79.3 | SE | 7.7 | 8.5 | Ci.-S., A.-Cu. | Fr.-Cu., S.-Cu. | ------ | ↯ ⌣ ⌓ p. |
| 7 | 57.40 | 28.2 | 32.7 | 24.9 | 79.2 | E, W | 8 | 6.5 | Ci., A.-Cu. | S.-Cu. W | ------ | ↯ ⌣° ⌓ p. |
| 8 | 55.90 | 28.3 | 31.4 | 25.4 | 79.7 | NW quad. | 13.8 | 6.7 | Ci.-S. | CU.-N.,S.-CU.NW,WNW | .8 | d° a. ⌣° ⌓ p. |
| 9 | 54.12 | 28 | 31.1 | 25.8 | 82.7 | W | 14.5 | 9.7 | A.-Cu. | S.-Cu. W, WNW | 1.1 | d° a. p. ↯² ⊤ p. |
| 10 | 53.22 | 26.8 | 31.4 | 24.8 | 88.8 | W | 10 | 10 | A.-Cu. | N. WNW | 2.9 | d a. ●° ↯ p. |
| 11 | 53.76 | 28 | 33.4 | 24 | 82.8 | Variable | 9.3 | 9.7 | A.-Cu. | S.-Cu. W | 2.5 | d° a. p. |
| 12 | 54.71 | 27.2 | 31.3 | 25 | 88.7 | S | 6.3 | 10 | A.-Cu. | N. SW | 40 | d² a ● ↯ ⊤ p. |
| 13 | 54.56 | 25 | 28.8 | 23.9 | 95.8 | SE quad. | 8.9 | 10 | ---------- | N. WSW | 131.2 | ● ↯ ⊤ a. p. |
| 14 | 54.81 | 26.2 | 32.2 | 23.4 | 90.5 | SE | 9.2 | 10 | ---------- | N. SW | 47.7 | ●² d ↯ ⊤ a. p. |
| 15 | 57.50 | 25.9 | 28.7 | 23.5 | 89.3 | SW quad. | 7.2 | 10 | A.-Cu. | N. SW | 9.4 | ● ↯ ⊤ a. ↯° ●° p. |
| 16 | 58.50 | 27.5 | 32.8 | 23.9 | 82.5 | SE | 8.1 | 8.5 | Ci.-S. | N. SW | 5.3 | d° a. p ↯° p. |
| 17 | 58.13 | 26.2 | 32.2 | 24.3 | 88.2 | S quad. | 8.1 | 9.2 | Ci.-S.; A.-Cu. | S.-Cu. SW | 17.8 | d° ● ↯° ⊤° p. |
| 18 | 56.72 | 25.5 | 29.2 | 22.8 | 90.2 | NW | 6 | 9.3 | A.-Cu. | S.-Cu. WNW | 10.7 | d° a. ● a. p. |
| 19 | 56.25 | 25.1 | 30.6 | 22.6 | 90.5 | E, S | 7.1 | 9.3 | A.-Cu. | S.-Cu. WSW | 3.8 | d a. p p. |
| 20 | 56.61 | 24.8 | 31.5 | 23 | 92.3 | SE quad. | 8.1 | 9.2 | A.-Cu. | S.-Cu. SE | 9.7 | d° ● p. |
| 21 | 56.47 | 26.3 | 32.7 | 22.7 | 85.7 | SE | 12.3 | 6 | Ci. | Fr.-Cu. SE | 3.6 | ↯ ⊤ p° p. |
| 22 | 56.31 | 27.1 | 33.9 | 23 | 79.8 | S quad. | 11.7 | 4.5 | Ci., A.-Cu. | Fr.-Cu. SE | .3 | ↯ ⊤ d° p. |
| 23 | 56.19 | 28 | 34.6 | 23.6 | 79.5 | Variable | 11.9 | 6.5 | A.-Cu. | Fr.-Cu., S.-CU. SE | ------ | ⌈↯ ↯ ⌒ p. |
| 24 | 55.83 | 26.6 | 29.9 | 23.5 | 87 | NW | 15.7 | 8.8 | A.-Cu. | S.-Cu., N. | 55.6 | d° ● p. |
| 25 | 53.08 | 25.2 | 26.2 | 24 | 93 | WNW | 28.9 | 10 | ---------- | N. NW | 31.3 | d° a. ● a. p. |
| 26 | 52.23 | 26.9 | 31.4 | 23.9 | 85.8 | SW quad. | 17.6 | 9 | A.-Cu. | S.-Cu. W, WNW | 16.8 | d° ● a. p p. |
| 27 | 55.14 | 27.2 | 32.4 | 23.2 | 83.2 | SE quad. | 7.1 | 6.5 | A.-Cu. | S.-Cu. WSW | ------ | |
| 28 | 57.12 | 27.6 | 32.2 | 25 | 85.3 | SE, W | 6.9 | 8.5 | A.-Cu. | S.-Cu. SW | 2.7 | d a. p. |
| 29 | 56.66 | 26.9 | 30 | 25 | 89.2 | W quad. | 7.5 | 8.5 | A.-Cu. | S.-Cu. WSW | 7.9 | d p a. p. ⌒ ↯ p. |
| 30 | 55.82 | 26.7 | 31.2 | 24 | 89 | W quad. | 11.2 | 8.7 | Ci., A.-Cu. | S.-Cu., N. W | 2.6 | ↯° d a ● ⌈↯ p. |
| 31 | 55.35 | 26.4 | 32.6 | 22.6 | 89.8 | SW quad. | 10.2 | 9.2 | A.-Cu. | S.-Cu., N. WSW | 48.5 | d°a. p. ● ⌈↯ ↯ p. |
| Mean | 755.64 | 26.7 | 31.3 | 23.9 | 87.2 | ---------- | 10.2 | 8.7 | ---------- | ---------- | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ---------- | ------ | ------ | ---------- | ---------- | 583.2 | |

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 630.82 | 16 | 16.8 | 14.9 | 99.8 | SW quad. | 57.8 | 10 | ---------- | ---------- | 251.5 | ≡² ↙° ●² a. p. |
| 2 | 32.63 | 16.8 | 19.1 | 13.5 | 93.5 | SW | 43.5 | 10 | Ci.-S. | Fr.-N. SW | 39.3 | ↙° ● a. p. ≡² p. |
| 3 | 33.64 | 18 | 21.3 | 16.2 | 92.8 | SW quad. | 16 | 9.9 | A.-Cu., Ci.-S. | Fr.-N. SSW | 23 | ≡ a. ● p a p. |
| 4 | 34.18 | 17.5 | 21 | 16.4 | 94.7 | SW | 17 | 9.1 | Ci.-S. | Fr.-N., S.-cf. SSW | 10.4 | ●° a. ≡ ● p. |
| 5 | 34.72 | 18.4 | 22.6 | 16.1 | 92.2 | S quad. | 12.8 | 9.7 | A.-Cu. ENE | S.-Cu. SSW | 6.6 | ≡° a. ● ⊂ ⊕ a p. |
| 6 | 35.65 | 18.1 | 22.4 | 15.9 | 89.5 | W | 10.2 | 9.9 | Ci.-S. NE | Cu. WSW | ------ | ⌣ ⌓ ↯ p. |
| 7 | 35.73 | 17.8 | 21.5 | 15.2 | 94.7 | W | 11.6 | 9.9 | A.-Cu. | Fr.-N. W quad. | ------ | ≡² a. ↯ p. d a. p. |
| 8 | 34.20 | 16.8 | 19.2 | 15 | 99.5 | W quad. | 21.3 | 10 | ---------- | ---------- | 30.6 | ≡² ● a. p. ↙° p. |
| 9 | 32.53 | 16.7 | 17.8 | 15.2 | 99.7 | W | 41.5 | 10 | ---------- | ---------- | 174.5 | ≡² ● ↙° a. p. ↯ p. |
| 10 | 31.43 | 16.5 | 17.5 | 15.5 | 99.8 | W | 56.1 | 10 | ---------- | ---------- | 271.7 | ●² ≡² ↙° ↯ a p ⌈↯ |
| 11 | 32.08 | 17.3 | 18.1 | 15.9 | 99 | WSW, W | 44.9 | 10 | ---------- | ---------- | 90.9 | ⌈↯ p ≡² ● ↙° a. p. |
| 12 | 33.20 | 16.9 | 17.8 | 15.7 | 99.7 | W, WSW | 30.4 | 10 | ---------- | ---------- | 103.9 | ↙° a ● ≡² d a. p |
| 13 | 32.73 | 16.8[2] | 17.8 | 15.4 | 99.8[3] | SW quad. | 31.2 | 10 | ---------- | ---------- | 176.5 | ● ≡² d² a. p ↙° p. |
| 14 | 32.94 | 16.8[2] | 18.2 | 15.1 | 100[3] | SW, WSW | 40.4 | 10 | ---------- | ---------- | 104.3 | ↙² ≡² a p ●² ⊤ p. |
| 15 | 35.30 | 16.8 | 17.8 | 15.3 | 100[3] | SW, WSW | 24.7 | 10 | ---------- | ---------- | 23.9 | ≡² ● a p |
| 16 | 36.57 | 16.9 | 20.7 | 15.3 | 97.5 | SW, W | 13.5 | 9.6 | Ci.-S. | N. WSW | 5.4 | d° a. ≡ ● a. p. |
| 17 | 35.84 | 17.6 | 22.4 | 15.3 | 92 | W | 14 | 9.3 | A.-Cu. WSW | Fr.-N. WSW | 35.5 | d² a ≡ ● p. |
| 18 | 34.48 | 16.2 | 18 | 15 | 99.8 | W quad. | 17.8 | 10 | ---------- | ---------- | 54.1 | ≡² ● a. p |
| 19 | 34.06 | 16.6 | 19.8 | 14.5 | 97.7 | W | 13.4 | 9.9 | Ci.-Cu. E | Fr.-N. W | 4.8 | ≡² p. ●° d a. p. |
| 20 | 34.19 | 16.7 | 20.8 | 15.4 | 98.2 | W quad. | 8.7 | 10 | A.-Cu. | S.-Cu., Fr.-N. | 15.7 | ≡² a ● a. p. |
| 21 | 34.29 | 17.8 | 23.3 | 15 | 90.8 | ESE | 12.2 | 7.4 | Ci. NEbyE | S. cf. ESE | 12.5 | ⌒° ● ≡² p. |
| 22 | 34.28 | 18 | 23.3 | 14.9 | 90.5 | E quad. | 14.8 | 6.3 | Ci. NE | Cu. SEbyE | 4.1 | ≡ ● ⊤ d p. |
| 23 | 34.33 | 18.2 | 23.5 | 15.2 | 90.8 | E quad. | 14.1 | 9.3 | Ci.-S. ENE | Cu. E | .3 | ≡² d² p. |
| 24 | 33.67 | 16.6 | 20.3 | 14.6 | 92.8 | NW quad. | 11.4 | 9.9 | A.-Cu. E, NE | N. NbyW | 57.1 | ⊕ a. ● p. |
| 25 | 31.03 | 16.5 | 18.8 | 15.2 | 99.8 | W quad. | 36.7 | 10 | ---------- | N. | 337 | ●² ≡ a. p. ↙ p. |
| 26 | 30.27 | 17.3 | 18 | 15.4 | 99.2 | W | 64.8 | 10 | ---------- | ---------- | 166.1 | ≡ ↙ ●² a p |
| 27 | 33.60 | 17.4 | 21.2 | 15.5 | 95.8 | WSW | 20.1 | 10 | Ci.-S. | S.-Cu. WSW | ------ | ≡² a ⊂° a. p ≡ p. |
| 28 | 35.31 | 17.6 | 18.8 | 15.9 | 99.5 | SW quad. | 26.8 | 10 | ---------- | ---------- | 64.9 | ≡² a ● a. p ↙° p. |
| 29 | 34.60 | 17.4 | 18 | 16.3 | 99.3 | WSW | 41.9 | 10 | ---------- | ---------- | 159.8 | ≡ ↙° ⌈↯ ●² a. p. |
| 30 | 33.79 | 16.7 | 18.4 | 15 | 99.7 | W quad. | 46.1 | 10 | ---------- | ---------- | 47.8 | ≡² ● ↙° a. p. |
| 31 | 33.04 | 16.9 | 18 | 14.7 | 100 | W quad. | 63.4 | 10 | ---------- | ---------- | 249.5 | ↙ ● a. ⌈↯ ↙² ●² p. |
| Mean | 633.71 | 17.1 | 19.7 | 15.3 | 96.7 | ---------- | 28.4 | 9.7 | ---------- | ---------- | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ---------- | ------ | ------ | ---------- | ---------- | 2,521.7 | |

[1] The barometric readings of this station are not reduced to sea level.
[2] Deduced from 5 observations only.
[3] Deduced from 4 observations only.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Perct.* | | *0-12.* | *0-10.* | | | *mm* | |
| 1 | 749.71 | 24.4[1] | 25.2[1] | 23.2[1] | 97.2[1] | SW quad. | 5.2 | 10 | ---------- | N. WNW | 286.7 | ●$^{2}$ a. p. ↙ p. |
| 2 | 53.22 | 26.7[2] | 29[2] | 22.9[2] | 81.2[2] | S quad. | 3.7 | 9.5 | Ci.-S. | N. SWbyS | 34.3 | ↙ p$^{2}$ a. ● a. p. Φ |
| 3 | 54.50 | 25.9 | 28.6 | 22.5 | 86.5 | SE quad. | 1 | 10 | Ci.-S. | Cu.-N. SSW | 6.6 | p a. d ● p. |
| 4 | 54.98 | 26.1 | 29.1 | 23 | 86.8 | SE quad. | 1.2 | 7.7 | Ci.-S. | Cu.-N. SSW | 23.1 | d$^{\circ}$ a. ↯ ● Φ p. |
| 5 | 55.86 | 27.2 | 30.7 | 23.5 | 81.7 | SE quad. | 1.3 | 5.8 | Ci.-S. | S.-Cu. | -------- | ϟ$^{\circ}$ ψ p. |
| 6 | 56.87 | 27.7 | 31.1 | 24 | 79.7 | SE quad. | 1.3 | 5.2 | Ci.-S. | S.-Cu. | -------- | Φ p. |
| 7 | 57.25 | 27.6 | 31 | 24.1 | 82.7 | S | 1.2 | 4.3 | Ci.-S. | Cu. | -------- | ψ p. |
| 8 | 55.80 | 27.4 | 31 | 23.7 | 84 | S quad. | 1 | 6.8 | Ci.-S. | Cu., Cu.-N. | -------- | ●$^{\circ}$ ψ p. |
| 9 | 53.77 | 27 | 30 | 24 | 88.2 | SW quad. | 1 | 9.8 | Ci.-S. | Cu.-N. WSW | 36.8 | Φ a. ● a. p ↯ p. |
| 10 | 52.45 | 25.9 | 27.3 | 22.5 | 94.3 | SW quad. | 1.7 | 10 | Ci.-S. | N. SW | 62.7 | ● a. ↯ ●$^{2}$ p. |
| 11 | 53.16 | 26.8 | 30 | 20.9 | 92 | S | 1.8 | 10 | Ci.-S. | Cu.-N. SSW | 319 | ● a. ↯ ●$^{2}$ p. |
| 12 | 54.23 | 24.7 | 29 | 21 | 93.5 | S quad. | 1.2 | 10 | Ci.-S. | N. SWbyW | 93 | ●$^{2}$ a ● p. |
| 13 | 53.65 | 23.8 | 25.3 | 21.6 | 96.3 | Variable | 1.2 | 10 | ---------- | N. | 329.2 | ●$^{2}$ ↯ a. p. |
| 14 | 54.13 | 23.8 | 26.9 | 21.2 | 97.2 | S | 1.2 | 10 | Ci.-S. | N. SSW | 140.4 | ●$^{2}$ a. p. |
| 15 | 56.66 | 25.8 | 29 | 22.5 | 88 | S | 1.5 | 8.8 | Ci.-S. | N. SSW | 4.8 | ● a. p. |
| 16 | 58.20 | 26.8 | 31.1 | 23 | 83.8 | S quad. | 1.3 | 5.8 | Ci.-S. | Cu.-N. SSW | 3.8 | ● a. |
| 17 | 57.53 | 26.5 | 30.7 | 22.5 | 84.8 | S quad. | 1.2 | 6.3 | Ci.-S. | S.-Cu. | 24.1 | Φ d a. ● p. |
| 18 | 56.20 | 25.2 | 30.5 | 22.2 | 87 | SE quad. | 1.2 | 8.2 | Ci.-S. | Cu.-N. | 29.5 | d ● p. |
| 19 | 55.78 | 26.2 | 30.4 | 22.1 | 83.2 | SE quad. | 1.2 | 4 | Ci.-S. | Cu., N. | 4.6 | d p. |
| 20 | 56.14 | 25.4 | 31.2 | 22.2 | 87.2 | SE quad. | 1 | 7.5 | Ci.-S. | N. SW | 17.8 | ● a. p. |
| 21 | 56.25 | 26.5 | 31.2 | 22.5 | 82.2 | Variable | 1.2 | 6 | Ci.-S. | Fr.-Cu. W | 1.3 | p ϟ p. |
| 22 | 56.17 | 26.8 | 31.5 | 22.5 | 80.3 | Variable | 1.2 | 3.8 | Ci.-S., Ci. | S.-Cu. | -------- | ϟ p. |
| 23 | 56.31 | 26.7 | 30.9 | 22.2 | 83.3 | Variable | 1.3 | 6 | Ci.-S. | S.-Cu. NW | -------- | ≡ Ω$^{2}$ a. |
| 24 | 55.58 | 25.6 | 29.4 | 22 | 87.5 | E quad. | 1 | 8 | Ci.-S. | S.-Cu. W | 65.4 | ≡ Ω$^{2}$ a. ● p. |
| 25 | 51.86 | 25.2 | 27.4 | 22 | 91.3 | W quad. | 3 | 10 | ---------- | N. | 164.7 | ●$^{2}$ a p |
| 26 | 50.91 | 27 | 28.5 | 23.6 | 87.8 | SW quad. | 2.3 | 10 | Ci.-S. | N.-cf. SW | 21.9 | p a. ϟ ● p. |
| 27 | 54.48 | 27.1 | 29.7 | 23.5 | 85.5 | S quad. | 2.7 | 8.2 | Ci.-S. | S.-Cu. S | -------- | p ● a. |
| 28 | 56.82 | 26.7 | 30 | 23.4 | 85.7 | S quad. | 1.5 | 8.7 | Ci.-S. | N.-cf. S | 23.8 | p a. p. |
| 29 | 56.19 | 26.7 | 29 | 23.4 | 91.7 | S | 1.7 | 8.7 | Ci.-S. | N.-cf. SW | 1.3 | ● a. ϟ p p. |
| 30 | 55.15 | 27.6 | 30.7 | 23.7 | 87.3 | S quad. | 1.8 | 8.3 | Ci.-S. | S.-Cu. S, SW | 55.9 | p a. d p. |
| 31 | 54.62 | 25.8 | 28 | 22.4 | 91.7 | S quad. | 3 | 9.7 | Ci.-S. | N.-cf. SW | 32.1 | ●$^{2}$ a. ⊤$^{\circ}$ a. p. ● p. |
| Mean | 754.98 | 26.2 | 29.5 | 22.7 | 87.5 | ---------- | 1.7 | 8 | ---------- | ---------- | -------- | |
| Total | -------- | ------ | ------ | ------ | ------ | ---------- | ------ | ------ | ---------- | ---------- | 1,782.8 | |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 748.86 | 23.3 | 24.3 | 22 | 94.8 | SE | 2.8 | 10 | ---------- | N. | 98.8 | ↙$^{\circ}$ a. ●$^{2}$ a. p. |
| 2 | 53.31 | 27.9 | 34.5 | 22.8 | 79 | Variable | 1 | 7 | Ci., Ci.-S. | Cu. SW | 31.5 | ●$^{2}$ p. |
| 3 | 54.92 | 27.2 | 34.6 | 23.2 | 86.7 | NW | .8 | 8.7 | ---------- | Cu., Cu.-N. S | 8.6 | ● ↯ p. |
| 4 | 55.20 | 27.6 | 35.4 | 24 | 84 | S quad. | 1 | 8.3 | Ci.-Cu. | Cu., Cu.-N. Variable | -------- | ϟ p |
| 5 | 55.68 | 28.2 | 34.7 | 24.2 | 85.5 | S, NW | .8 | 8.8 | Ci. | Cu.-N. S | -------- | d ↯ p. |
| 6 | 56.58 | 29.2 | 34.9 | 24.7 | 80 | Calm | 0 | 8.8 | Ci., Ci.-S. | Cu. S, SW | -------- | ↯ d ϟ p. |
| 7 | 56.52 | 29 | 35.4 | 25 | 79.8 | S quad. | 1.2 | 5.8 | ---------- | Cu., Cu.-N. W, SW | -------- | d a. |
| 8 | 54.50 | 27.8 | 34.4 | 23.2 | 79.8 | Calm | 0 | 8 | Ci.-S. | Cu. | -------- | Ω a. ψ$^{2}$ p. |
| 9 | 52.47 | 27.2 | 32.5 | 24.5 | 87.7 | E quad. | 1 | 9.3 | Ci.-S. | N. | 14 | Ω a. ● ↯ p. |
| 10 | 51.68 | 26 | 31 | 24.2 | 89.2 | SE | .2 | 9.7 | ---------- | N. | 18.6 | ● a. p. |
| 11 | 52.48 | 26.6 | 30.5 | 24 | 88.8 | SE, NW | 1 | 9.7 | ---------- | Cu.-N. S | 1.8 | ● a. p. |
| 12 | 53.58 | 27.4 | 35.7 | 23.3 | 84.2 | N | .2 | 7.7 | Ci.-Cu. | Cu.-N. SW | -------- | ↯$^{2}$ d p. |
| 13 | 53.08 | 27.5 | 35.5 | 23.8 | 82.5 | SE | 1.2 | 8.2 | Ci.-Cu. | Cu., Cu.-N. SW | 52.3 | Ω a. ●$^{2}$ ↙$^{\circ}$ ↯$^{2}$ p. |
| 14 | 53.03 | 27.8 | 33.7 | 24 | 84.7 | Variable | .7 | 8.3 | Ci. | Cu. NW | -------- | d ● a. ϟ p. |
| 15 | 55.61 | 28.1 | 34.8 | 23.7 | 81.8 | SE quad. | .8 | 7.8 | Ci.-S. | Cu., Cu.-N. SW | 7.6 | Ω a ● ↯ ϟ p. |
| 16 | 57.62 | 28.1 | 34.2 | 23.9 | 82.7 | NW | .2 | 7.5 | Ci.-S. | Variable | -------- | ○$^{2}$ a ↯ d ϟ p. |
| 17 | 57.28 | 27.9 | 25 | 24.2 | 81.3 | S quad. | 1 | 7.7 | Ci. SE | Cu.-N. NW | 15.5 | Ω a. ⊤ ● ↯ p. |
| 18 | 56.16 | 25.6 | 33.7 | 22.8 | 89.8 | SE, SW | .7 | 9.2 | Ci.-S. | Cu.-N. SW | 62.8 | ● a. ●$^{2}$ ↯$^{\circ}$ ϟ p. |
| 19 | 55.72 | 26.3 | 33 | 22.5 | 85.8 | SE | .5 | 7.5 | Ci., Ci.-S. | Cu.-N. SW | -------- | ● a. |
| 20 | 56.38 | 25.7 | 29.3 | 23.4 | 89.7 | Variable | .8 | 7 | Ci.-S. | Cu. SW | -------- | Ω$^{2}$ ≡ d a. |
| 21 | 56.20 | 27.4 | 34.6 | 23.2 | 85.2 | Calm | 0 | 5 | Ci. | Cu. SSW, E | -------- | Ω$^{2}$ a. ϟ p. |
| 22 | 56.01 | 28.1 | 35.2 | 23 | 81.5 | S quad. | .8 | 3.8 | Ci. | Cu. SE | -------- | Ω$^{2}$ a. ⌒$^{2}$ ϟ p. |
| 23 | 56.28 | 27.8 | 34.9 | 23 | 80.3 | NW quad. | .8 | 6 | Ci., Ci.-S. | Cu. E | 2.3 | Ω$^{2}$ ◯$^{2}$ a. |
| 24 | 55.04 | 24.2 | 25.8 | 23 | 93.7 | NW | .5 | 9.3 | ---------- | N. | 223.8 | ● a. ●$^{2}$ p. |
| 25 | 49.83 | 25.2 | 28.9 | 22.7 | 92.3 | NW | 1.8 | 10 | ---------- | Cu.-N. NW | 89.1 | ●$^{2}$ a. ● p. |
| 26 | 48.66 | 26 | 29.9 | 22.9 | 91.3 | S quad. | 1 | 8.5 | Ci.-S. | Cu.-N. W | 1.8 | ● a. |
| 27 | 53.02 | 28.3 | 34.6 | 22.4 | 83.5 | S quad. | .5 | 8 | Ci.-S. | Cu. | -------- | Ω ◯$^{2}$ a. ◯$^{\circ}$ p. |
| 28 | 55.64 | 28 | 34.6 | 23.4 | 83.2 | Calm | 0 | 6.8 | Ci.-S. | S.-Cu. | -------- | Ω$^{2}$ ◯$^{2}$ a. |
| 29 | 54.56 | 28.2 | 35.1 | 24.4 | 80 | SW | .5 | 4.3 | Ci., Ci.-S. | Cu. W | -------- | Ω a. |
| 30 | 53.50 | 27.1 | 33.5 | 22.1 | 83.8 | SE, NE | .7 | 8.7 | Ci.-S. | Cu.-N. | 3 | Ω ◯$^{2}$ a ●$^{\circ}$ p. |
| 31 | 52.47 | 27.2 | 31.5 | 24 | 80.7 | SE | .7 | 9 | ---------- | Cu.-N. SW, NW | -------- | Ω a. d a p. |
| Mean | 754.25 | 27.2 | 33.1 | 23.5 | 84.9 | ---------- | .7 | 7.9 | ---------- | ---------- | -------- | |
| Total | -------- | ------ | ------ | ------ | ------ | ---------- | ------ | ------ | ---------- | ---------- | 631.5 | |

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[1] Deduced from 5 observations only.

[2] Deduced from 4 observations only.

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[=18° 22′ N; λ=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 745.92 | 24.6 | 28.2 | 22.2 | 87.7 | SE quad. | -------- | 10 | -------- | N. NW | 123 | ↙ ●²a. ●° p. |
| 2 | 53.15 | 26.5 | 32.8 | 22.7 | 81.2 | Variable | 12.1 | 8.2 | A.-Cu. SW | Cu.-N. NE | 46 | ⌒ a. p. ●²☈ p. |
| 3 | 54.42 | 27 | 32.6 | 23.7 | 84.2 | Variable | 9.5 | 4.3 | A.-Cu. SW | Cu.-N. NE | 10.7 | ☈ ● p. |
| 4 | 54.92 | 26.8 | 32.9 | 24.1 | 88.2 | Variable | 7.7 | 4.8 | Ci. | S.-Cu. W | 8.4 | ⊤ ☈ ● ↯ p. |
| 5 | 55.45 | 27.6 | 32.6 | 24.3 | 85.8 | Variable | 8.2 | 7 | Ci. E | S.-Cu. W | .3 | ↯ ●a. ⊤☈●°p. |
| 6 | 56.50 | 28.4 | 32.5 | 24.5 | 79.6 | S, NE | 8.8 | 8.2 | Ci. N | S.-Cu. S, W | -------- | ○ a. ↯ a. p. |
| 7 | 56.27 | 28.6 | 32.6 | 25 | 79.2 | Variable | 9.5 | 4.5 | A.-Cu, Ci. NE, E | S.-Cu. | -------- | |
| 8 | 54.23 | 27.9 | 32.5 | 24.1 | 80.5 | S | 10 | 6.8 | Ci. E | Cu.-N. W | -------- | Ω ○a. ∞ ⊍ p. |
| 9 | 52.10 | 27.6 | 30.2 | 25.2 | 84.5 | W quad. | 6.1 | 10 | Ci.-S. E | S.-Cu. W | .9 | ⊍ ∞ a. ●° p. |
| 10 | 51 | 25.4 | 28.9 | 24.1 | 90.2 | W quad. | 15.3 | 10 | -------- | S.-Cu. W | 16.5 | ●° a. ● p. |
| 11 | 51.86 | 25.3 | 27 | 23.6 | 92.2 | W quad. | 13.7 | 10 | -------- | S.-Cu. W | 1.1 | ●° a. p. |
| 12 | 53.26 | 25.4 | 30.5 | 23.5 | 86.5 | S, NW | 11.8 | 9.3 | A.-Cu. SW | S.-Cu. W | 9.7 | ⌒ a. ● p. |
| 13 | 52.66 | 26.3 | 30.5 | 23.6 | 84.8 | W quad. | 9.6 | 9.8 | A.-Cu. SW | S.-Cu. W | .3 | ●° p. |
| 14 | 52.45 | 26.6 | 29.7 | 23.6 | 82.8 | SW | 15.2 | 9.2 | A.-Cu., Ci.-S. SW | S.-Cu. W | 1.8 | ⌒ a. ● p. |
| 15 | 55.27 | 26.8 | 32.6 | 24 | 84 | SW, S | 8.8 | 8.7 | A.-Cu. SW | N. SW | .8 | ●⊤ p. |
| 16 | 57.39 | 27.2 | 32.2 | 23.9 | 83 | S, N | 10.8 | 5.3 | A.-Cu., Ci. E | Cu.-N. W | -------- | ⊤ ↯ p. |
| 17 | 56.97 | 26.6 | 33.3 | 23.1 | 85 | S | 10.3 | 5.3 | Ci. E | Cu.-N. W | 40.1 | ⊤ ☈ ●² ⌒ ↯ p. |
| 18 | 55.60 | 25.6 | 31.5 | 23.2 | 86.8 | SE quad. | 13.6 | 7.2 | Ci. SE | Cu.-N. NE | 18 | ⊤ ● p. |
| 19 | 55.15 | 26.1 | 32 | 23 | 85.7 | S | 13.5 | 6.5 | A.-Cu., Ci. SE, E | Cu.-N. S | 2.5 | ⊤ ● p. |
| 20 | 56.01 | 26.1 | 28.6 | 23.7 | 86.8 | S, SE | 7.2 | 8.5 | Ci. E | S.-Cu. SE | -------- | ↯ p. |
| 21 | 56 | 27.2 | 31.2 | 24.1 | 83.5 | Variable | 10.7 | 3 | A.-Cu., Ci. E | Cu. S | -------- | |
| 22 | 55.87 | 27.9 | 32 | 23.9 | 81.3 | E quad. | 11.4 | .2 | -------- | Cu. | -------- | Ω a. |
| 23 | 56.25 | 27.8 | 32.6 | 24.3 | 80.5 | S, NE | 9.2 | 2.8 | Ci. E | Cu. SE | -------- | Ω a. |
| 24 | 54.49 | 26 | 28 | 24.1 | 90.2 | N | 19.3 | 9.5 | -------- | N. N | 67.8 | ● a. p. |
| 25 | 49.16 | 26.6 | 30 | 24 | 88.7 | N quad. | 38.1 | 10 | A.-Cu. NE | S.-Cu. N | 141.3 | ● a. p. ↙° p. |
| 26 | 47 | 24.9 | 30.4 | 23.3 | 90 | S, SW | 27.2 | 10 | -------- | S.-Cu. W | 8.4 | ↙° ●² a. |
| 27 | 52.52 | 27 | 31.6 | 24.1 | 77.3 | S | 16 | 9.5 | A.-S. | S.-Cu. | -------- | |
| 28 | 55.29 | 27.3 | 33.1 | 23.6 | 81.3 | S, E | 8.6 | 7.5 | Ci. E | S.-Cu. | -------- | |
| 29 | 54.15 | 27.9 | 32.8 | 24.1 | 80.5 | S, NW | 5.9 | 6.2 | Ci. E | Cu. S | -------- | Ω a. ○ a. p. |
| 30 | 53.15 | 26.6 | 31.8 | 23.6 | 82.8 | NW quad. | 8.8 | 9.2 | Ci. E | S.-Cu. W, NW | .5 | Ω a. ●° p. |
| 31 | 51.71 | 26.2 | 30.5 | 24.1 | 80.3 | W quad. | 14.3 | 10 | Ci. E | S..Cu. W, WSW | 2.8 | ●° a. p. ⊍ p. |
| Mean | 753.75 | 26.7 | 31.2 | 23.8 | 84.4 | -------- | 12.4 | 7.5 | -------- | -------- | -------- | |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 500.9 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.7 | 24 | 91 | 70 | 6 | 7 | ------ | ○° p. |
| 2 | 32.6 | 23.1 | 93 | 68 | 3 | 9 | 4.1 | Ω° a. ● d p. |
| 3 | 33 | 22.9 | 93 | 66 | 2 | 3 | ------ | Ω° a. d° p. |
| 4 | 33 | 23.8 | 94 | 59 | 2 | 4 | ------ | Ω° ○ a. |
| 5 | 33.5 | 23.8 | 90 | 62 | 3 | 3 | ------ | Ω° a. |
| 6 | 34.1 | 22.1 | 92 | 50 | 2 | 5 | ------ | Ω° a. d ☈ p. |
| 7 | 34.1 | 21.8? | 79 | 85 | 8 | 10 | .5 | Ω a. ●° p. |
| 8 | 34.1 | 21.3 | 86 | 64 | 5 | 8 | 11.9 | Ω° a. ☇° p. |
| 9 | 34.2 | ------ | 96 | 70 | 8 | 10 | 7.1 | ●° ⊤° a. |
| 10 | 32.6 | 21.5 | 93 | 74 | 10 | 10 | ------ | ●° a. ☈ p. |
| 11 | 31.4 | 24.2 | 85 | 85 | 10 | 10 | ------ | ☈ d° p. |
| 12 | 32.3 | 24.1 | 92 | 88 | 10 | 10 | 6.4 |  |
| 13 | 31 | 21.5 | 96 | 94 | 10 | 6 | ------ | ●° d a. |
| 14 | 32.3 | 23.1 | 91 | 87 | 7 | 7 | ------ | Ω° a. |
| 15 | 33.5 | 19.8 | 91 | 62 | 10 | 10 | ------ | Ω° a. |
| 16 | 33 | 20.3 | 96 | 75 | 8 | 10 | ------ | Ω° a. d° ☈ p. |
| 17 | 33.2 | 20.5 | 91 | 70 | 8 | 10 | ------ | ☇$^{2}$ p. |
| 18 | 33.2 | 20 1 | 96 | 51 | 6 | 8 | ------ | Ω° a. |
| 19 | 32.5 | 20.5 | 95 | 53 | 8 | 10 | ------ | ☈ p a. |
| 20 | 32.1 | 20.8 | 97 | 78 | 8 | 8 | ------ | Ω° a. ☇$^{2}$ p. |
| 21 | 33.3 | 21.3 | 94 | 56 | 8 | 10 | ------ | Ω a. ☇$^{2}$ p. |
| 22 | 34.5 | 22.4 | 88 | 73 | 10 | 10 | 22.9 | ☈ a. ☇$^{2}$ p. |
| 23 | 34 3 | 20.9 | 96 | 65 | 10 | 10 | ------ | ●$^{2}$ a. |
| 24 | 33.2 | 21.6 | 95 | 66 | 6 | 10 | ------ |  |
| 25 | 33.3 | 22.4 | 89 | 58 | 6 | 10 | ------ | ☇$^{2}$ p. |
| 26 | 32.5 | 21.9? | 79 | 71 | 6 | 10 | ------ |  |
| 27 | 32.5 | 21.9? | 88 | 64 | 10 | 10 | ------ |  |
| 28 | 34.3 | 23.3 | 93 | 63 | 6 | 10 | ------ |  |
| 29 | 34.2 | 21.8 | 95 | 65 | 6 | 10 | 1.8 | Ω$^{2}$ a. p p. |
| 30 | 32.5 | 20.6 | 94 | 80 | 4 | 6 | ------ | Ω$^{2}$ a. ☇$^{2}$ p. |
| 31 | 33.2 | 20.9 | 92 | 64 | 6 | 8 | ------ |  |
| Mean | 33.1 | 21.9 | 91.6 | 68.9 | 6.8 | 8.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 54.7 |  |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.7 | 22.5 | 97 | 67 | 8 | 5 | ------ | Ω a. |
| 2 | 31.8 | 21.8 | 96 | 70 | 1 | 9 | 1.3 | Ω a. p p. |
| 3 | 32.3 | 22 | 97 | 69 | 3 | 4 | ------ | Ω a. ⌒ p. |
| 4 | 31.5 | 22.2 | 96 | 78 | 10 | 6 | ------ | Ω a. p° p. |
| 5 | 31.7 | 20.5 | 97 | 92 | 2 | 10 | 18.3 | Ω ● ☈ a. d p. |
| 6 | 31.3 | 21.5 | 98 | 92 | 1 | 10 | 51.3 | d a. p. ●$^{2}$ ⊤ p. |
| 7 | 29.9 | 23 | 96 | 82 | 10 | 10 | ------ | Ω ⊤ a. |
| 8 | 29.5 | 21.8 | 96 | 78 | 10 | 4 | 8.1 | Ω a. ☈ p. |
| 9 | 29.9 | 21.6 | 93 | 77 | 10 | 9 | 22.9 | ● a. p. |
| 10 | 27.1 | 22.4 | 98 | 89 | 10 | 10 | 14.7 | ● a. ↙° a. p. p p. |
| 11 | 29.8 | 21.2 | 96 | 81 | 10 | 10 | 22.8 | ● a. p° p. |
| 12 | 28 | 21.5 | 97 | 96 | 9 | 10 | 17.3 | Ω ● a. d ⊤ p. |
| 13 | 29.3 | 21 | 97 | 82 | 9 | 10 | 7.9 | Ω ⌒ ● a. |
| 14 | 31 | 21.5 | 97 | 68 | 2 | 4 | ------ | Ω a. |
| 15 | 30.3 | 20.2 | 97 | 83 | 2 | 10 | ------ | Ω a. p° p. |
| 16 | 30.3 | 20.2 | 95 | 87 | 1 | 10 | 1 | Ω a. ⊤ p p. |
| 17 | 30.8 | 21 | 96 | 76 | 1 | 9 | ------ | Ω a. ⊤ p. |
| 18 | 29.1 | 21.5 | 96 | 80 | 2 | 9 | 23.6 | Ω a. ● ☈ p. |
| 19 | 30.3 | 20 5 | 96 | 81 | 10 | 10 | .5 | ● a. d p. |
| 20 | 31.5 | 20.5 | 95 | 74 | 1 | 10 | ------ | Ω a ☈ p |
| 21 | 31.3 | 21 | 96 | 79 | 10 | 9 | 3.6 | Ω a ● ☈ p. |
| 22 | 28.5 | 20.5 | 98 | 96 | 10 | 10 | 19.3 | Ω ⊤ ● a. |
| 23 | 29.5 | 22.2 | 95 | 73 | 10 | 10 | ------ | d$^{2}$ a. |
| 24 | 31.1 | 22.2 | 96 | 65 | 10 | 4 | ------ | Ω a. |
| 25 | 30.7 | 22.2 | 88 | 70 | 1 | 5 | ------ | Ω a. |
| 26 | 30.3 | 23 | 83 | 68 | 1 | 4 | ------ | Ω a. |
| 27 | 32 3 | 22.2 | 96 | 69 | 1 | 9 | ------ | Ω a. |
| 28 | 32.5 | 22.2 | 96 | 72 | 0 | 9 | ------ | Ω a. |
| 29 | 31.8 | 22.5 | 95 | 70 | 0 | 3 | ----- | Ω a. |
| 30 | 31.5 | 2. | 96 | 75 | 0 | 9 | ------ | ≡° Ω a. |
| 31 | 31.8 | 21.6 | 95 | 69 | 0 | 8 | ------ | Ω a. ☈ p. |
| Mean | 30.6 | 21.6 | 95.5 | 77.7 | 5 | 8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 212.6 |  |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.5 | 23.8 | 90 | 65 | 4 | 7 | ------ | ☇ p. |
| 2 | 30.4 | 23 | 88 | 78 | 8 | 9 | ------ |  |
| 3 | 31.1 | 23.9 | 87 | 75 | 8 | 5 | ------ |  |
| 4 | 31 | 23.5 | 93 | 74 | 9 | 8 | ------ | d a. |
| 5 | 31.1 | 23 | 86 | 70 | 3 | 7 | ------ |  |
| 6 | 30.5 | 23.7 | 87 | 71 | 6 | 9 | 0.5 | ☈ ●° p. |
| 7 | 29.6 | 23.4 | 86 | 78 | 9 | 9 | ------ |  |
| 8 | 29.9 | 22.9 | 82 | 78 | 7 | 2 | ------ |  |
| 9 | 29.5 | 24.3 | 82 | 80 | 10 | 9 | 14.5 | d a. |
| 10 | 27.5 | 21.9? | 89 | 81 | 10 | 10 | 13.5 | ☈ a. ● a. p. |
| 11 | 29.5 | 20.8? | 94 | 84 | 10 | 8 | 17 | ☈ a. ● a. p. |
| 12 | 28.6 | 19 | 93 | 100 | 9 | 10 | 22.9 | ● a. p. |
| 13 | 28.5 | 22 | 90 | 66 | 9 | 9 | .3 | ●° a. |
| 14 | 29.5 | 22 | 92 | 77 | 9 | 9 | ------ |  |
| 15 | 30.1 | 22.5 | 87 | 74 | 5 | 2 | ------ |  |
| 16 | 29.9 | 22.7 | 85 | 73 | 1 | 7 | ------ |  |
| 17 | 30 | 22.5 | 87 | 77 | 8 | 7 | ------ | ○ a. |
| 18 | 28.3 | 22.9 | 88 | 82 | 9 | 10 | 2.3 | ☈ ● p. |
| 19 | 28 | 21.4 | 93 | 81 | 10 | 10 | ------ | ☈ d p. |
| 20 | 29.1 | 22 | 85 | 73 | 3 | 7 | ------ | ☈ ●° p. |
| 21 | 29.1 | 22.5 | 92 | 76 | 9 | 8 | 3.3 | ☈ ● p. |
| 22 | 27.6 | 22.5 | 95 | 76 | 10 | 10 | 1.3 | ☈ a d a. p. |
| 23 | 29 | 22 | 81 | 77 | 10 | 7 | ------ | ● a. d a. p. |
| 24 | 29.1 | 23.4 | 90 | 77 | 10 | 3 | .3 |  |
| 25 | 29.3 | 25.7 | 87 | 69 | 10 | 9 | ------ | ● a, |
| 26 | 30.5 | 25 | 77 | 69 | 9 | 10 | ------ |  |
| 27 | 31 | 24.3 | 87 | 71 | 5 | 9 | ------ |  |
| 28 | 30.8 | 24 | 87 | 68 | 3 | 6 | ------ | d° p. |
| 29 | 29.9 | 22.9 | 87 | 74 | 2 | 2 | ------ |  |
| 30 | 30.2 | 22.8 | 88 | 79 | 6 | 5 | ------ |  |
| 31 | 30.6 | 22.9 | 91 | 77 | 8 | 4 | ------ | ☈ d p. |
| Mean | 29.7 | 22.9 | 87.9 | 75.8 | 7.4 | 7.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 75.9 |  |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.3 | 22.1 | 94 | 72 | 6 | 5 | ------ |  |
| 2 | 31.3 | 23.9 | 97 | 76 | 5 | 6 | ------ |  |
| 3 | 31.5 | 22.8 | 96 | 74 | 5 | 8 | ------ |  |
| 4 | 31.5 | 22.2 | 94 | 73 | 5 | 8 | ------ |  |
| 5 | 30.4 | 23.5 | 93 | 74 | 6 | 7 | 20.6 | ● p. |
| 6 | 30.5 | 22.8 | 92 | 73 | 5 | 7 | ------ |  |
| 7 | 32 | 22 5 | 92 | 62 | 6 | 5 | ------ | ☇ p. |
| 8 | 31.8 | 22.3 | 96 | 72 | 6 | 6 | 26.4 | ●$^{2}$ ⊤ ☇ p. |
| 9 | 31.2 | 22.2 | 96 | 70 | 5 | 6 | ------ |  |
| 10 | 32.2 | 22.3 | 95 | 69 | 5 | 7 | ------ | ⊤ p. |
| 11 | 31.6 | 21.8 | 93 | 64 | 6 | 5 | ------ |  |
| 12 | 32.2 | 22.8 | 97 | 69 | 6 | 7 | ------ | ☈ p. |
| 13 | 30.2 | 22.1 | 96 | 69 | 5 | 7 | ------ |  |
| 14 | 31.2 | 21.8 | 97 | 74 | 5 | 5 | ------ |  |
| 15 | 31.6 | 22 | 97 | 70 | 6 | 7 | ------ |  |
| 16 | 30.9 | 21 8 | 97 | 68 | 5 | 8 | ------ |  |
| 17 | 29.7 | 21.3 | 96 | 78 | 9 | 9 | 19.3 | ⊤ ● p. |
| 18 | 30.7 | 21.8 | 96 | 68 | 8 | 7 | ------ |  |
| 19 | 31.3 | 21 | 96 | 65 | 5 | 7 | ------ |  |
| 20 | 32.3 | 20.6 | 95 | 59 | 5 | 5 | ------ |  |
| 21 | 31.1 | 22.1 | 97 | 64 | 6 | 7 | 23.1 | ●$^{2}$ ⊤ ☇ p. |
| 22 | 29.9 | 21.4 | 97 | 72 | 5 | 9 | 29.2 | ●$^{2}$ ⊤ ☇ p. |
| 23 | 29 | 20.9 | 96 | 74 | 5 | 8 | ------ |  |
| 24 | 30.2 | 21.3 | 96 | 63 | 5 | 8 | ------ |  |
| 25 | 31.2 | 20.6 | 96 | 73 | 5 | 6 | ------ | ☈ p. |
| 26 | 31.4 | 21 | 92 | 66 | 5 | 5 | ------ |  |
| 27 | 31.6 | 21.4 | 98 | 66 | 7 | 6 | ------ | ☈ p. |
| 28 | 31.2 | 22.5 | 97 | 74 | 5 | 5 | ------ |  |
| 29 | 31.7 | 22.4 | 97 | 73 | 5 | 5 | ------ | ☇ p. |
| 30 | 31.8 | 22.5 | 96 | 63 | 6 | 6 | ------ |  |
| 31 | 31.5 | 23.7 | 97 | 70 | 5 | 6 | 19.8 | ● ⊤ ☇ p. |
| Mean | 31.2 | 22 | 95.6 | 69.6 | 5.6 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 138.4 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAGAYAN, MISAMIS.

[$\phi$=8° 29′ N; $\lambda$=124° 38′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m.[1] | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 34.7 | 22.7 | 84 | 72 | 5 | 4 | ------ | Ω$^2$ ◯ a. ☇ p. |
| 2 | 32.9 | 22.5 | 89 | 62 | 5 | 5 | ------ | Ω$^2$ a. ☈$^2$ p. |
| 3 | 32.7 | 24.1 | 87 | 64 | 6 | 10 | ------ | Ω$^2$ a. ☈ p$^2$ p. |
| 4 | 33.1 | 23.1 | 94 | 65 | 8 | 3 | ------ | Ω a. ☈ p. |
| 5 | 31.6 | 22.7 | 90 | 68 | 7 | 10 | ------ | Ω$^2$ a. ☈ ω p. |
| 6 | 31.9 | 22.2 | 87 | 75 | 3 | 8 | ------ | Ω$^2$ a ☈ ⊖ p. |
| 7 | 32.9 | 23 | 88 | 59 | 8 | 7 | ------ | Ω$^2$ a. ☇ p. |
| 8 | 32.2 | 23.5 | 90 | 68 | 10 | 8 | ------ | Ω$^2$ a. ☈ p. |
| 9 | 33.4 | 23.3 | 92 | 57 | 8 | 6 | ------ | Ω$^2$ a. |
| 10 | 31.9 | 22.3 | 90 | 79 | 3 | 10 | ------ | Ω$^2$ a. p$^2$ d p. |
| 11 | 31.6 | 22.8 | 91 | 66 | 10 | 8 | ------ | Ω$^2$ a. ☇ p. |
| 12 | 31.9 | 23.2 | 86 | 67 | 10 | 8 | ------ | Ω$^2$ a. ● ☇ p. |
| 13 | 29.8 | 22.6 | 89 | 84 | 10 | 10 | ------ | Ω d a. |
| 14 | 32.6 | 22 | 91 | 60 | 8 | 10 | ------ | Ω$^2$ a. d° ☈ p. |
| 15 | 32.7 | 21.7 | 84 | 59 | 2 | 3 | ------ | Ω$^2$ a. ☇ p |
| 16 | 32.1 | 21.6 | 89 | 70 | 2 | 7 | ------ | Ω$^2$ ◯° a. ☇ p. |
| 17 | 29.3 | 22.9 | 88 | 70 | 10 | 9 | ------ | Ω$^2$ a. ◯$^2$ ☇ p. |
| 18 | 30.4 | 22.3 | 85 | 86 | 10 | 10 | ------ | Ω$^2$ a. ◯$^2$ ☇ p. |
| 19 | 32.3 | 21.2 | 85 | 62 | 10 | 7 | ------ | Ω$^2$ d a. ☇ p. |
| 20 | 31.9 | 21.3 | 86 | 58 | 3 | 5 | ------ | Ω$^2$ ◯ a. ● p. |
| 21 | 30.7 | 22.1 | 94 | 68 | 9 | 6 | ------ | Ω$^2$ a. ☇ p. |
| 22 | 32 | 21.9 | 95 | 60 | 10 | 8 | ------ | d a. p. ☇ p. |
| 23 | 27.6 | 22.7 | 95 | 77 | 10 | 10 | ------ | Ω$^2$ ≡° d a. ☇ p. |
| 24 | 31.7 | 21.8 | 91 | 65 | 10 | 7 | ------ | Ω d a. ◯$^2$ ☇ p. |
| 25 | 34.4 | 22.5 | 89 | 53 | 7 | 6 | ------ | Ω$^2$ a. ◯ ☇ p. |
| 26 | 34.1 | 23.5 | 88 | 55 | 3 | 10 | ------ | Ω$^2$ a. ◯° ☇ p. |
| 27 | 34.6 | 23.8 | 83 | 54 | 9 | 6 | ------ | Ω$^2$ ◯$^2$ a. ☇ p. |
| 28 | 34.3 | 21.4 | 80 | 51 | 0 | 4 | ------ | ● ☈ p. |
| 29 | 32.4 | 22.5 | 88 | 65 | 9 | 6 | ------ | Ω$^2$ a ● ☈ p. |
| 30 | 32.1 | 21.2 | 93 | 70 | 3 | 8 | ------ | Ω$^2$ a. ● ☈ p. |
| 31 | 32 | 22.2 | 91 | 71 | 10 | 7 | ------ | Ω$^2$ a. ◯ ●° ☇ p. |
| Mean | 32.2 | 22.5 | 88.8 | 65.8 | 7 | 7.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 34.3 | 23.6 | 89 | 56 | 6 | 5 | ------ | Ω$^2$ a. ⊕° ☈ d° p. |
| 2 | 33.1 | 24.4 | 88 | 61 | 7 | 6 | ------ | Ω ⊕ a. ◯° p. |
| 3 | 33.1 | 24.4 | 90 | 76 | 7 | 7 | .5 | Ω a ● ⊤ ☇ p. |
| 4 | 32.5 | 24.1 | 88 | 68 | 9 | 7 | ------ | Ω a. ⊕$^2$ ☈ ω p. |
| 5 | 32.6 | 23.7 | 90 | 54 | 7 | 9 | ------ | Ω a. ω p. |
| 6 | 33 | 24.4 | 91 | 70 | 6 | 8 | .3 | Ω ● ⊤ a ⊤ ☇ p. |
| 7 | 31.5 | 23.6 | 92 | 62 | 6 | 9 | 13 | ◯ ⊤ ☇ ω$^2$ ω p. |
| 8 | 31 | 23.4 | 96 | 66 | 8 | 8 | ------ | ● a. p° ☈ ω p. |
| 9 | 32.5 | 23.8 | 95 | 57 | 7 | 6 | ------ | Ω$^2$ a. ☇ ω p. |
| 10 | 32.5 | 23.9 | 90 | 59 | 7 | 7 | .8 | Ω ◯$^2$ a. ⊤$^2$ ●° p. |
| 11 | 31.2 | 23.2 | 91 | 62 | 9 | 8 | ------ | Ω a. ☇ p |
| 12 | 31.6 | 23.6 | 89 | 59 | 10 | 4 | ------ | Ω ◯$^2$ a ↙° ⊤ ●° p. |
| 13 | 30.7 | 23.5 | 90 | 68 | 10 | 10 | ----- | Ω a ●° p. |
| 14 | 32.2 | 23.1 | 89 | 48 | 8 | 5 | ------ | Ω a. d° p ⌒$^2$ a. p. |
| 15 | 32 | 23.2 | 91 | 53 | 3 | 4 | ------ | Ω ◯ a. ☇ p. |
| 16 | 32 | 23.1 | 86 | 61 | 3 | 5 | ------ | Ω a. ⊤ d° p. |
| 17 | 28.7 | 23.4 | 89 | 73 | 10 | 9 | 2.8 | d° ⊤ ● a. ☇ p. |
| 18 | 29.8 | 23.4 | 87 | 65 | 10 | 10 | ------ | ● d° a. ↙° p. |
| 19 | 31.1 | 21.7 | 91 | 47 | 10 | 9 | ------ | Ω d° a. ↙° a. p. |
| 20 | 31.5 | 21.4 | 93 | 57 | 5 | 6 | ------ | ⊕° a. ↙° a p. ⊕ p. |
| 21 | 31 | 23.5 | 90 | 63 | 9 | 6 | .3 | ⊕ ↙° a p ☇ ⊤ p. |
| 22 | 30.8 | 24.1 | 87 | 61 | 10 | 8 | 27.4 | d a. ↙° ● a. p. |
| 23 | 27.3 | 22.9 | 92 | 83 | 10 | 10 | 1.8 | ● a. ↙° p. |
| 24 | 31.2 | 25.6 | 69 | 52 | 10 | 6 | ------ | ↙ a p |
| 25 | 32.4 | 22.9 | 95 | 44 | 7 | 5 | ------ | Ω ◯$^2$ a. ◯° p. |
| 26 | 32.8 | 23.3 | 92 | 67 | 6 | 9 | ------ | Ω ◯ a. p° p. |
| 27 | 32.5 | 23.6 | 86 | 61 | 2 | 2 | ------ | Ω a. ⊤ ☇° p. |
| 28 | 32.2 | 23 | 86 | 50 | 0 | 3 | ------ | Ω° ⊕° a. ☈ p. |
| 29 | 31.5 | 23.3 | 87 | 62 | 0 | 2 | ------ | Ω a. ⊤ ☇ p. |
| 30 | 31.5 | 23.4 | 88 | 64 | 6 | 5 | ------ | ⊕ a. p. ☈ p° p. |
| 31 | 32.8 | 23.1 | 83 | 54 | 8 | 3 | ------ | Ω a. ⊤ ☇ p° p. |
| Mean | 31.7 | 23.5 | 89 | 60.7 | 7 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 46.9 |  |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32.8 | 26.3 | 73 | 55 | 10 | 10 | ------ | ☇ d° p. |
| 2 | 32.9 | 25.8 | 80 | 59 | 10 | 10 | ------ | ☈° p. |
| 3 | 34.8 | 25 | 77 | 64 | 10 | 10 | ------ | Ω a. ω p. |
| 4 | 33.3 | 23.1 | 84 | 61 | 10 | 10 | ------ | Ω ◯ a. ω p. |
| 5 | 32.3 | 23.1 | 82 | 76 | 10 | 10 | ------ | Ω d° a. ω p |
| 6 | 32.2 | 22.6 | 82 | 69 | 8 | 7 | ------ | Ω a. |
| 7 | 32.8 | 23.1 | 86 | 69 | 10 | 8 | ------ | ◯ a. p. ω$^2$ ☇ p. |
| 8 | 32.4 | 24.2 | 83 | 70 | 10 | 10 | ------ | d ⊤° ω ☇ p. |
| 9 | 34.9 | 23.6 | 88 | 45 | 10 | 7 | 3.8 | Ω a. ω ☇ p. |
| 10 | 29.5 | 23.7 | 92 | 83 | 10 | 10 | 15.2 | ☈ a. ●° a. p. |
| 11 | 30.6 | 22.6 | 83 | 75 | 10 | 10 | .8 | d$^2$ a. |
| 12 | 33 | 23.2 | 91 | 54 | 10 | 10 | 1 | ●° a p. ☇° p. |
| 13 | 29.5 | 23.4 | 88 | 77 | 10 | 10 | 2.8 | Ω ◯° ● a. d p. |
| 14 | 32.3 | 23.2 | 80 | 53 | 10 | 10 | ------ | Ω a. ☇° p. |
| 15 | 31.3 | 22.3 | 82 | 73 | 10 | 10 | ------ | ω ☇° Ω a. |
| 16 | 31.3 | 21.8 | 76 | 72 | 10 | 7 | ------ | Ω a. |
| 17 | 29.5 | 23 | 85 | 73 | 10 | 10 | ------ | Ω a ☇ p. |
| 18 | 29.8 | 24.2 | 83 | 72 | 10 | 10 | ------ | ☈$^2$ a d° ☇° p. |
| 19 | 31.2 | 22.9 | 83 | 59 | 10 | 10 | ------ | d a. ☇° a. p. |
| 20 | 32.9 | 22.6 | 85 | 52 | 10 | 10 | 8.4 | ●° a. ● p. |
| 21 | 32.2 | 22.8 | 90 | 69 | 10 | 10 | 5.7 | d a. ☇° p. |
| 22 | 31.2 | 22.7 | 92 | 61 | 10 | 10 | ------ | ● a. ☇ p. |
| 23 | 31.7 | 24.2 | 75 | 74 | 10 | 10 | 1 | d ☇ p. |
| 24 | 32.4 | 24.1 | 68 | 62 | 10 | 10 | ------ | d a. ☇ p. |
| 25 | 31.3 | 24 | 81 | 57 | 10 | 10 | 7.4 |  |
| 26 | 31.7 | 22.8? | 74 | 51 | 10 | 10 | ------ | ● a. p p. |
| 27 | 32.7 | 24 | 82 | 51 | 10 | 10 | .5 | d$^2$ a. |
| 28 | 32 | 23.5? | 79 | 64 | 10 | 9 | ------ | Ω a. ☈ p. |
| 29 | 33.6 | 22.1 | 90 | 58 | 10 | 7 | ------ | Ω° a. ☇ p. |
| 30 | 35 | 22.6 | 88 | 50 | 10 | 7 | ------ | Ω a. ☇ p. |
| 31 | 34.4 | 23.8 | 88 | 65 | 10 | 10 | ------ | Ω a. d p. |
| Mean | 32.2 | 23.4 | 82.9 | 63.6 | 9.9 | 9.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 46.6 |  |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 26.4 | 23.8 | 97 | 96 | 10 | 10 | 6.6 | ☇ a. d° a. p. |
| 2 | 25.6 | ------ | 93 | 90 | 10 | 10 | 61.7 | ☈ a. ●$^2$ p. |
| 3 | 25.6 | 23.2 | 99 | 87 | 10 | 10 | 18.8 | ● a. |
| 4 | 30.3 | ------ | 93 | 76 | 4 | 4 | 1.3 | ● a. |
| 5 | 30.6 | 24.4 | 96 | 72 | 2 | 2 | ------ |  |
| 6 | 30.8 | 24.7 | 94 | 74 | 5 | 3 | ------ | Ω a. |
| 7 | 30.2 | 25.2 | 93 | 75 | 4 | 2 | .3 | Ω a. d$^2$ ⌒° p. |
| 8 | 30.7 | 25 | 90 | 75 | 8 | 6 | 1 | d$^2$ a. |
| 9 | 30.8 | 25.4 | 93 | 71 | 4 | 4 | 2.8 | p a. p. |
| 10 | 31.2 | 25.3 | 92 | 74 | 8 | 4 | ------ | ⌒° ω p. |
| 11 | 30.8 | 25.6 | 88 | 74 | 8 | 6 | 32.3 | p$^2$ a p. |
| 12 | 29.4 | ------ | 97 | 76 | 10 | 7 | 14.5 | ● a. |
| 13 | 30.4 | 25.8 | 85 | 72 | 6 | 8 | .8 | p a. |
| 14 | 31.2 | 25.1 | 92 | 71 | 4 | 6 | ------ | d a ω p. |
| 15 | 31.3 | 24.2 | 93 | 74 | 4 | 8 | 34 | ω Ω a. ☈ ●$^2$ p. |
| 16 | 29.4 | ------ | 97 | 79 | 10 | 9 | 41.9 | d a. ●$^2$ p. |
| 17 | 29.7 | ------ | 97 | 75 | 8 | 8 | 7.6 | ω a. ●° a. p. |
| 18 | ------ | ------ | 88 | ------ | 7 | 6 | 1.6 | ●° a. ☈ ● p. |
| 19 | 30.2 | ------ | ------ | 100 | 8 | 10 | 24.7 | ω ◯ a. ● d p. |
| 20 | 27.3 | ---- | 97 | 88 | 10 | 8 | 48 | ☈ ● a. d a. p. |
| 21 | 27.5 | 23.6 | 90 | 92 | 8 | 8 | 14.7 | ●° a. p. |
| 22 | 27.2 | 23.5 | 91 | 83 | 9 | 10 | 32 | ● a. p. |
| 23 | 28.5 | 23.4 | 95 | 84 | 10 | 10 | 12 | ● a. p. |
| 24 | 30.4 | 24 | 88 | 76 | 4 | 8 | .5 |  |
| 25 | 29.8 | 25.2 | 89 | 75 | 8 | 6 | ------ | p a. |
| 26 | 30.4 | 24.8 | 85 | 74 | 6 | 4 | ------ | ◯ a. p. |
| 27 | 30.2 | 24.4 | 96 | 69 | 6 | 6 | .3 | Ω a. ◯° ☇° p. |
| 28 | 31.7 | 23.9 | 97 | 65 | 2 | 2 | ------ | ●° a. ☇° p. |
| 29 | 31.4 | 24.2 | 94 | 73 | 4 | 4 | ------ | Ω ◯° a. p° ☇° p. |
| 30 | 32.2 | 24.4 | 90 | 72 | 2 | 4 | ------ | Ω a. ⌒° ω° p. |
| 31 | 32.8 | 25.4 | 88 | 63 | 2 | 4 | ------ | ⊤° ⊖ p. |
| Mean | 29.8 | 24.5 | 92.6 | 77.5 | 6.5 | 6.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 357.4 |  |

---

[1] No rain gauge.

## METEOROLOGICAL DATA, ETC.—Continued.

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.9 | 23.6 | 92 | 85 | 10 | 10 | ------ |  |
| 2 | 29.4 | 23.4 | 92 | 88 | 10 | 10 | ------ |  |
| 3 | 30.6 | 23.4 | 89 | 89 | 10 | 10 | ------ | Φ² ⍦ p. |
| 4 | 30.4 | 23.4 | 93 | 83 | 10 | 10 | ------ |  |
| 5 | 31.3 | 23.3 | 92 | 86 | 10 | 10 | ------ | d° ↯° p. |
| 6 | 31.4 | 25.3 | 96 | 81 | 10 | 10 | ------ | ⊤²a. ⍦Φ²↯²p. |
| 7 | 31.3 | 25.3 | 92 | 75 | 10 | 10 | ------ | ⊤²d°a. ◯²↯²p. |
| 8 | 30 | 25 | 95 | 80 | 10 | 10 | ------ |  |
| 9 | 29.5 | 23.8 | 90 | 86 | 10 | 10 | ------ |  |
| 10 | 29.4 | 23.8 | 90 | 89 | 10 | 10 | ------ | ↯² Φ p. |
| 11 | 30 | 23.8 | 92 | 85 | 10 | 10 | ------ | d a. ⊤² d° p. |
| 12 | 30 | 23.7 | 95 | 76 | 10 | 10 | ------ |  |
| 13 | 29.6 | 23.4 | 94 | 85 | 10 | 10 | ------ | d a. Φ ⍦ p. |
| 14 | 30.5 | 23.3 | 90 | 79 | 10 | 10 | ------ | ⍦ ⚡² p. |
| 15 | 30.6 | 23.2 | 89 | 85 | 10 | 10 | ------ |  |
| 16 | 30.6 | 23.3 | 93 | 87 | 10 | 5 | ------ |  |
| 17 | 30.6 | 23.2 | 92 | 77 | 10 | 10 | ------ | d a p. |
| 18 | 30.6 | 22.6 | 93 | 88 | 10 | 10 | 13.2 | ⚡ ⊤² a. d a. p. |
| 19 | 30.6 | 22.6 | 95 | 82 | 10 | 10 | ------ | p² a. |
| 20 | 30.7 | 24.4 | 92 | 91 | 10 | 10 | ------ | ⊤² d a. |
| 21 | 31 | 23.8 | 85 | 88 | 10 | 10 | 37.6 | ↯² ↙° ●² p. |
| 22 | 30.9 | 23.5 | 93 | 80 | 10 | 10 | 31.5 | d ● p. |
| 23 | 31 | 22.3 | 95 | 80 | 10 | 10 | ------ |  |
| 24 | 29.6 | 22.1 | 88 | 79 | 10 | 10 | ------ | ⚡² p. |
| 25 | 30 | 22.1 | 88 | 82 | 10 | 10 | 40.1 | ↙° ●² p. |
| 26 | 30 | 23.6 | 93 | 79 | 10 | 10 | ------ |  |
| 27 | 30.4 | 22.1 | 90 | 81 | 10 | 10 | ------ |  |
| 28 | 30.5 | 22 | 90 | 78 | 10 | 8 | ------ | ⚡ p. |
| 29 | 30.4 | 22.1 | 95 | 86 | 10 | 9 | ------ | ⍦² ⚡ p. |
| 30 | 30.4 | 25 | 92 | 89 | 10 | 10 | ------ | d° a. ↯² ⍦ p. |
| 31 | 30.4 | 24.6 | 90 | 83 | 10 | 10 | ------ | ↯² ⍦ p. |
| Mean | 30.4 | 23.5 | 91.8 | 83 3 | 10 | 9.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 122.4 |  |

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.8 | 23.8 | 95 | 89 | 10 | 10 | 24.1 | ⊤ ● a. ● Φ ⚡ p. |
| 2 | 29.7 | 24 | 92 | 89 | 10 | 10 | 7.4 | ● a. p d p. |
| 3 | 31.9 | 23.7 | 90 | 83 | 10 | 7 | .3 | ● a. ↯ d p. |
| 4 | 30.9 | 22.6 | 92 | 81 | 10 | 4 | ------ | d a. |
| 5 | 31.8 | 25.4 | 95 | 80 | 9 | 5 | ------ |  |
| 6 | 32.3 | 23.5 | 92 | 72 | 3 | 3 | ------ | Ω² a. |
| 7 | 32.7 | 23.5 | 91 | 75 | 9 | 10 | ------ | Ω² a. ⍦ p. |
| 8 | 32.1 | 23 | 90 | 75 | 10 | 10 | 5.6 | Ω a. Φ ⚡ p. |
| 9 | 32.4 | 23.6 | 95 | 75 | 7 | 9 | 5.1 | ●d² a. ● ⌒ ⚡ p. |
| 10 | 27.7 | 23.3 | 91 | 97 | 10 | 10 | 67.8 | ⊤ ● a. ●² ↯ p. |
| 11 | 27.3 | 20.9 | 95 | 92 | 10 | 10 | 50.8 | ⊤ ●² a. p. ⚡ p. |
| 12 | 27.8 | 22.5 | 96 | 96 | 10 | 10 | 110 | ●² a. p. |
| 13 | 29.3 | 21.1 | 96 | 88 | 10 | 8 | 48.7 | d ● a ●² ↯ p. |
| 14 | 27.8 | 22.1 | 90 | 87 | 10 | 10 | 15.8 | ● a. |
| 15 | 29.8 | 22.5 | 95 | 80 | 10 | 4 | 1.5 | ● a. |
| 16 | 31.3 | 22.6 | 91 | 76 | 3 | 5 | ------ | Ω² a. |
| 17 | 31.7 | 22.5 | 89 | 75 | 10 | 10 | 12.2 | Ω² a. ↯ ⌒ p. |
| 18 | 27.8 | 22.3 | 96 | 85 | 10 | 10 | 2.8 | ● ⊤ a. d ⚡ ●° p. |
| 19 | 28.2 | 21.9 | 96 | 74 | 10 | 10 | 1 | ● a. d ⚡ p. |
| 20 | 29.8 | 23.1 | 94 | 77 | 10 | 10 | 19 | Ω² ⊤ ● a. ● ⚡ p. |
| 21 | 29.9 | 21.5 | 93 | 95 | 10 | 10 | 28.4 | ⊤° ● a. p. |
| 22 | 30.3 | 22.4 | 92 | 73 | 10 | 10 | 40.1 | d° a. d ⚡ ●² p. |
| 23 | 28.9 | 22.4 | 96 | 86 | 10 | 10 | 36.9 | ● a p. |
| 24 | 28.9 | 21.5 | 87 | 77 | 10 | 10 | 6.9 | ●² a. ● p. |
| 25 | 31.3 | 23.9 | 87 | 74 | 10 | 10 | 10.7 | d a. ● p. |
| 26 | 30.8 | 24.4 | 91 | 85 | 10 | 10 | 13 | ● a. p. |
| 27 | 29.7 | 25 | 93 | 86 | 10 | 10 | 1.8 | p ● p. |
| 28 | 31.4 | 22.9 | 95 | 77 | 9 | 9 | ------ | d a. |
| 29 | 32.3 | 23.4 | 93 | 72 | 2 | 8 | ------ | Ω² a. |
| 30 | 33.2 | 22.6 | 90 | 77 | 10 | 6 | 1 | Ω² d° a. ● ⚡ p. |
| 31 | 31.8 | 25.8 | 94 | 78 | 10 | 10 | 10.7 | Ω²d²● a. ⊕● p. |
| Mean | 30.3 | 23 | 92.6 | 81.5 | 9.1 | 8.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 521.6 |  |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.6 | 24.2 | 94 | 78 | 10 | 9 | 1.3 | ●° Φ p. |
| 2 | 33.1 | 26.1 | 93 | 69 | 9 | 9 | 1.8 | ●° Φ p. |
| 3 | 33.3 | 26.5 | 90 | 67 | 9 | 9 | ------ | ⍦⊤ p. |
| 4 | 32.8 | 25.5 | 87 | 73 | 9 | 8 | ------ |  |
| 5 | 33 | 26.5 | 86 | 68 | 7 | 7 | ------ |  |
| 6 | 32.4 | 25.2 | 94 | 73 | 8 | 8 | ------ |  |
| 7 | 32.1 | 25.5 | 93 | 75 | 8 | 9 | 2.3 |  |
| 8 | 32.1 | 24.9 | 94 | 74 | 9 | 8 | ------ | ●° a. |
| 9 | 31.9 | 26.4 | 84 | 73 | 9 | 9 | 18 | d² ⚡ p. |
| 10 | 28.6 | 25.4 | 90 | 81 | 10 | 10 | .8 | ● a. ⊤ a. p. d² p. |
| 11 | 32 | 25.4 | 92 | 75 | 10 | 10 | 5.3 | d a. ● ⚡ p. |
| 12 | 29.9 | 25.5 | 94 | 95 | 10 | 10 | 81.3 | ●² a. p ↯ p. |
| 13 | 31.3 | 22 | 97 | 78 | 10 | 10 | 64.3 | d° a. ↯ ●² p. |
| 14 | 28.1 | 23.1 | 91 | 86 | 10 | 10 | 13 | d² a. |
| 15 | 31 | 23.6 | 94 | 78 | 10 | 10 | ------ | ● ⊤ a. ⚡ p. |
| 16 | 31.6 | 24.9 | 94 | 75 | 10 | 9 | ------ |  |
| 17 | 31.6 | 24.8 | 94 | 73 | 8 | 9 | ------ | Ω a. ↯ p. |
| 18 | 29.7 | 25.8 | 86 | 73 | 9 | 9 | 33.5 | Ω a. ● ⚡ p. |
| 19 | 29.9 | 21.5 | 96 | 76 | 10 | 10 | 25.1 | d² ⊤ a ●° ⚡ p. |
| 20 | 29.8 | 23 | 96 | 92 | 10 | 10 | 31.7 | ↯ a. ● a. p. |
| 21 | 26.1 | 22.8 | 97 | 93 | 8 | 10 | 63.8 | ↯ a. ● a. p. |
| 22 | 30.6 | 22.6 | 97 | 75 | 10 | 9 | 13 | ● d a p. |
| 23 | 28.8 | 22.9 | 97 | 91 | 9 | 10 | 8.1 | d a ● a. p. |
| 24 | 28.6 | 23.5 | 81 | 73 | 10 | 10 | 1 | ↙° d p. |
| 25 | 29.2 | 25.2 | 85 | 87 | 10 | 10 | 13 | ↙° ● p. |
| 26 | 30.7 | 25.3 | 84 | 76 | 10 | 9 | .5 | d² p. |
| 27 | 31.6 | 25.1 | 93 | 76 | 9 | 9 | ------ | d p. |
| 28 | 32.5 | 26.1 | 86 | 83 | 10 | 10 | .5 | d² a. p. |
| 29 | 31.8 | 24.2 | 96 | 72 | 8 | 8 | ------ |  |
| 30 | 31.1 | 25.3 | 93 | 70 | 9 | 9 | 13.7 | ● a. ●° ↯ p. |
| 31 | 31.8 | 23.4 | 95 | 73 | 10 | 10 | ------ | ◯ ⍦ p. |
| Mean | 30.9 | 24.6 | 91.7 | 77.5 | 9.3 | 9.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 392 |  |

### GUIUAN.

[$\phi$=11° 03′ N; $\lambda$=125° 43′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 29.8 | 26.7 | 91 | 76 | 7 | 8 | ------ | ◯² a. p. ↙° p. |
| 2 | 29.9 | 23.6 | 86 | 81 | 3 | 8 | ------ | ↙° a ◯° p. |
| 3 | 30.1 | 27.3 | 87 | 79 | 2 | 5 | ------ | ↙°a. ◯²a. p. ⍦²p. |
| 4 | 30.3 | 27.2 | 84 | 82 | 8 | 10 | ------ | ◯² ⚡ p. |
| 5 | 30.9 | 27.4 | 88 | 79 | 9 | 8 | ------ | ⊤ p. |
| 6 | 31.1 | 25.4 | 97 | 84 | 9 | 6 | ------ | ↙° d° ⌒² p. |
| 7 | 30.2 | 24.3 | 83 | 81 | 9 | 10 | 0.3 | d° p |
| 8 | 30.4 | 24.9 | 85 | 72 | 8 | 9 | ------ | ⍦ ⚡ p. |
| 9 | 30.8 | 26.5 | 80 | 72 | 7 | 9 | ------ | ◯² ⍦² p. |
| 10 | 30 2 | 26.3 | 80 | 81 | 7 | 9 | ------ | ↙° ◯° a. ◯² p. |
| 11 | 30.5 | 26.6 | 80 | 79 | 9 | 4 | ------ |  |
| 12 | 30.5 | 27.3 | 87 | 78 | 5 | 5 | 25.4 | ↯ ●² p. |
| 13 | 30.6 | 23.9 | 80 | 79 | 8 | 8 | ------ | ↙° p. |
| 14 | 30.7 | 26.3 | 78 | 78 | 9 | 8 | ------ | ⚡ p. |
| 15 | 30.9 | 26.4 | 86 | 76 | 3 | 7 | ------ | ◯² p. |
| 16 | 31.4 | 24.9 | 87 | 78 | 5 | 6 | ------ | d° ⚡ p. |
| 17 | 30.5 | 23.8 | 85 | 83 | 8 | 10 | 2.5 | Ω°a. ⊤ ↙°d² ⚡²p |
| 18 | 26.8 | 24.8 | 89 | 91 | 10 | 10 | 3.6 | d ↙° p. |
| 19 | 29.3 | 22.9 | 81 | 80 | 9 | 9 | ------ |  |
| 20 | 30.7 | 23.8 | 84 | 76 | 8 | 8 | 11.2 | ↙° ↯ ● p. |
| 21 | 30.1 | 23.2 | 87 | 76 | 8 | 9 | 4.8 | ● p. |
| 22 | 28.1 | 24.6 | 88 | 82 | 9 | 10 | 3.3 | d a. ⚡ ● p. |
| 23 | 28.4 | 22.5 | 84 | 79 | 10 | 10 | ------ | ◯° ↙° ⚡² p. |
| 24 | 28.4 | ------ | 80 | 73 | 10 | 10 | ------ | ↙° a. p. |
| 25 | 29 | ------ | 80 | 83 | 8 | 8 | ------ | ↙° ◯² a. p. |
| 26 | 30.3 | ---- | 83 | 75 | 7 | 7 | ------ | ↙° a. |
| 27 | 30.1 | 26.7 | 82 | 80 | 6 | 7 | ------ |  |
| 28 | 31 | 26.9 | 84 | 81 | 3 | 5 | ------ | ◯² ⚡² p. |
| 29 | 30.4 | 26.8 | 94 | 80 | 2 | 1 | ------ | ⚡ p. |
| 30 | 30.7 | 27.2 | 88 | 81 | 8 | 3 | ------ | ◯²a. p. Φ ⚡² p. |
| 31 | 30.3 | 27.3 | 90 | 82 | 9 | 4 | ------ | ↯ p. |
| Mean | 30.1 | 25.6 | 85.1 | 79.3 | 7.2 | 7.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 51.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### BORONGAN.

[$\phi=11° 37' N ; \lambda=125° 26' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.7 | 22.2 | 97 | 58 | 5 | 6 | 2.5 | Ω ≡ a. ⋓ ϟ ●° p. |
| 2 | 32 | 22.1 | 97 | 68 | 2 | 6 | ------ | ≡ a ϟ ⋓° p. |
| 3 | 33.7 | 23.4 | 97 | 63 | 3 | 6 | ------ | Ω ≡ a. ϟ ⋓ p. |
| 4 | 33.8 | 23.2 | 96 | 58 | 3 | 7 | ------ | Ω° ≡° a. ⋓° p. |
| 5 | 33.5 | 23 7 | 97 | 65 | 4 | 6 | ------ | Ω ≡ a. ⋓ ϟ° p. |
| 6 | 34.7 | 23.2 | 97 | 61 | 4 | 6 | ------ | Ω° ≡ a. ⋓ ϟ° p. |
| 7 | 32.3 | 24.2 | 92 | 74 | 7 | 7 | 3.6 | Ω a. ○° ϟ ● p. |
| 8 | 32.2 | 23.5 | 91 | 83 | 7 | 8 | ------ | d Φ ϟ p. |
| 9 | 33.4 | 25.5 | 82 | 58 | 6 | 6 | ------ | ⋓° p. |
| 10 | 34 3 | 21.8 | 95 | 56 | 3 | 5 | ------ | Ω° ≡° a. ⋓ p. |
| 11 | 33.4 | 22 | 97 | 55 | 3 | 6 | ------ | Ω ≡ ○° a. |
| 12 | 34.4 | 22.7 | 97 | 71 | 3 | 7 | ------ | Ω ≡ a. d° ϟ p. |
| 13 | 32.8 | 23.4 | 92 | 70 | 6 | 7 | 2 | Ω a. ● ⊤ ϟ p. |
| 14 | 33 | 22.7 | 96 | 56 | 4 | 7 | ------ | ●° ϟ p. |
| 15 | 34.7 | 21.5 | 96 | 49 | 2 | 5 | ------ | Ω ≡° a. |
| 16 | 31.7 | 22 | 96 | 64 | 2 | 4 | ------ | Ω ≡° d a. ○ ϟ p |
| 17 | 33.8 | 22.3 | 95 | 71 | 4 | 7 | 15.2 | Ω ≡° a. ⊤ ●° ϟ$^{2}$ p. |
| 18 | 25.9 | 22.7 | 91 | 83 | 10 | 9 | 12.2 | ● a. p. |
| 19 | 31.5 | 23.6 | 80 | 58 | 8 | 6 | ------ | d p. |
| 20 | 32.8 | 23.3 | 89 | 55 | 7 | 6 | ------ | Ω ○ a. ϟ p. |
| 21 | 31 8 | 23.6 | 81 | 68 | 7 | 7 | 1 | Ω$^{2}$ a. ●° ϟ p. |
| 22 | 30.9 | 23.3 | 91 | 65 | 6 | 8 | ------ | d ϟ p. |
| 23 | 31.9 | 23.3 | 86 | 65 | 7 | 6 | 2.5 | ϟ p. |
| 24 | 28.9 | 23.8 | 83 | 70 | 8 | 8 | .3 | ● a. ϟ d p. |
| 25 | 31.7 | 24 | 77 | 74 | 5 | 8 | ------ | d p. |
| 26 | 32 | 23.8 | 83 | 57 | 5 | 5 | ------ | Ω d a. ϟ p. |
| 27 | 34 | 21.9 | 96 | 60 | 4 | 7 | ------ | Ω ≡° a. |
| 28 | 35.4 | 22. | 97 | 52 | 3 | 5 | ------ | Ω ≡ a. ϟ° p. |
| 29 | 35.5 | 22.1 | 97 | 50 | 2 | 4 | ------ | Ω ≡ a. Φ° p. |
| 30 | 35.2 | 22 | 97 | 51 | 3 | 4 | ------ | Ω ≡ a. |
| 31 | 35 | 22.7 | 94 | 53 | 4 | 6 | ------ | Ω a. ϟ ⊤ p. |
| Mean | 32.9 | 23 | 92 | 62.6 | 4.7 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 39.3 | |

### MASBATE.

[$\phi=12° 22' N ; \lambda=123° 36' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.4 | 26.2 | 90 | 77 | 10 | 9 | 2 | |
| 2 | 29.8 | 25.8 | 92 | 91 | 10 | 10 | 10.2 | |
| 3 | 31.2 | 25.8 | 94 | 78 | 9 | 8 | ------ | |
| 4 | 31.5 | 25.4 | 92 | 71 | 8 | 9 | ------ | |
| 5 | 32 | 25.5 | 94 | 72 | 9 | 8 | ------ | |
| 6 | 31 | 26 | 94 | 72 | 8 | 8 | ------ | |
| 7 | 30.8 | 26.4 | 92 | 71 | 8 | 9 | ------ | |
| 8 | 30.5 | 26.6 | 89 | 75 | 9 | 10 | ------ | |
| 9 | 30 | 27.2 | 87 | 77 | 9 | 9 | ------ | |
| 10 | 29.8 | 27.2 | 85 | 78 | 8 | 9 | ------ | |
| 11 | 30.6 | 26.4 | 90 | 78 | 9 | 7 | ------ | |
| 12 | 30.8 | 25.8 | 92 | 83 | 8 | 9 | 8.6 | |
| 13 | 30 | 24 | 90 | 79 | 9 | 9 | 1.3 | |
| 14 | 30.4 | 22.2 | 89 | 85 | 9 | 9 | ------ | |
| 15 | 31.2 | 25.5 | 85 | 64 | 9 | 8 | ------ | |
| 16 | 30.8 | 24.6 | 95 | 85 | 10 | 9 | 1.5 | |
| 17 | 30.5 | 25 6 | 94 | 71 | 8 | 9 | .8 | |
| 18 | 26.5 | 26.2 | 91 | 98 | 10 | 10 | 55.6 | |
| 19 | 28.2 | 23.4 | 92 | 76 | 10 | 10 | .3 | |
| 20 | 29.4 | 25.8 | 86 | 76 | 10 | 8 | ------ | |
| 21 | 29.6 | 25 | 90 | 76 | 9 | 9 | ------ | |
| 22 | 29.8 | 25.6 | 88 | 85 | 9 | 10 | 6.9 | |
| 23 | 29.2 | 23.4 | 95 | 82 | 10 | 9 | 2.5 | |
| 24 | 27.8 | 25 | 89 | 80 | 10 | 10 | 1.5 | |
| 25 | 27.8 | 25.4 | 92 | 80 | 10 | 10 | 3.6 | |
| 26 | 30 | 24.8 | 92 | 73 | 10 | 10 | .5 | |
| 27 | 30 | 25.6 | 87 | 83 | 10 | 10 | .8 | |
| 28 | 31.2 | 25.2 | 95 | 71 | 8 | 8 | ------ | |
| 29 | 30.2 | 25.6 | 92 | 70 | 7 | 4 | ------ | |
| 30 | 30.2 | 26 | 92 | 69 | 9 | 9 | ------ | |
| 31 | 30.2 | 26.6 | 90 | 74 | 10 | 9 | ------ | |
| Mean | 30 | 25.5 | 90.8 | 77.4 | 9.1 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 96.1 | |

### ROMBLON.

[$\phi=12° 35' N ; \lambda=122° 16' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.9 | 23.6 | 89 | 73 | 10 | 8 | 17.8 | ● p. |
| 2 | 32.8 | 23.9 | 91 | 71 | 10 | 8 | .8 | d a. |
| 3 | 33.4 | 26.1 | 84 | 70 | 7 | 6 | 1.7 | ● p. |
| 4 | 33.1 | 23.8 | 85 | 69 | 6 | 3 | 1.5 | ϟ p. |
| 5 | 33 | 24 | 86 | 70 | 8 | 7 | ------ | ● a. |
| 6 | 34 | 24.7 | 90 | 65 | 7 | 5 | ------ | Ω a. |
| 7 | 34.2 | 24 3 | 88 | 59 | 3 | 3 | ------ | Ω a. Φ ⋓′ p. |
| 8 | 34.8 | 23.1 | 92 | 65 | 3 | 8 | ------ | Ω a. ⋓ p. |
| 9 | 34.8 | 25.7 | 82 | 64 | 9 | 6 | ------ | Φ ⋓ p. |
| 10 | 32.4 | 25.4 | 77 | 69 | 9 | 9 | ------ | |
| 11 | 32.8 | 26 | 78 | 81 | 8 | 9 | 1.8 | p p. |
| 12 | 32.1 | 23.9 | 93 | 73 | 8 | 8 | 4.6 | ● ⌒ a. |
| 13 | 31.5 | 24.5 | 87 | 88 | 9 | 10 | 2.1 | ●° p. |
| 14 | 31.6 | 23.5 | 84 | 80 | 10 | 8 | 10.9 | ●° a. ⇙° ● p. |
| 15 | 31.8 | 22.7 | 82 | 71 | 9 | 7 | ------ | ●° a. |
| 16 | 33.1 | 25 | 86 | 69 | 7 | 5 | ------ | |
| 17 | 34.6 | 24.7 | 89 | 63 | 6 | 7 | ------ | ⌈⊿ p. |
| 18 | 30.9 | 24.6 | 82 | 75 | 10 | 10 | 5.1 | d° a. ⊤ ● p. |
| 19 | 30.3 | 22.9 | 82 | 78 | 10 | 9 | ------ | ●° a. |
| 20 | 33.8 | 24.6 | 81 | 64 | 9 | 7 | ------ | |
| 21 | 34 | 22.6 | 85 | 68 | 3 | 7 | ------ | Ω a. |
| 22 | 33.3 | 23.9 | 87 | 64 | 9 | 8 | 10.2 | ⌈⊿$^{2}$ p. |
| 23 | 33 | 22.8 | 95 | 69 | 10 | 8 | ------ | ● a. ϟ p. |
| 24 | 31.6 | 23.7 | 82 | 73 | 10 | 10 | .3 | d p. |
| 25 | 28.9 | 25 | 84 | 80 | 10 | 10 | 1.6 | ●° a. p. |
| 26 | 33.6 | 24.5 | 83 | 71 | 9 | 8 | 1.3 | ● p. |
| 27 | 31.5 | 24.6 | 90 | 78 | 9 | 9 | 8.4 | ● a. |
| 28 | 30.1 | 24.8 | 84 | 74 | 7 | 9 | 2.5 | ● a. |
| 29 | 34.4 | 25.4 | 86 | 63 | 7 | 3 | ------ | |
| 30 | 34 | 25.5 | 80 | 67 | 7 | 9 | ------ | |
| 31 | 33.4 | 25 | 84 | 66 | 8 | 7 | ------ | ⌒ a. |
| Mean | 32.8 | 24.3 | 85.4 | 70.6 | 8 | 7.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 70.6 | |

### GUBAT.

[$\phi=12° 55' N ; \lambda=124° 08' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.7 | 24.4 | 90 | 69 | 10 | 9 | ------ | ⊤ ⋓ p. |
| 2 | 30 | 24.3 | 93 | 85 | 6 | 8 | ------ | p p. |
| 3 | 32.2 | 24.2 | 93 | 63 | 8 | 7 | ------ | |
| 4 | 32.7 | 23.9 | 95 | 63 | 10 | 10 | ------ | ⋓ p. |
| 5 | 32.7 | 24.3 | 96 | 64 | 8 | 9 | ------ | |
| 6 | 32.5 | 25 | 92 | 63 | 8 | 7 | ------ | ⊕ ⋓ p. |
| 7 | 32.4 | 25.9 | 94 | 62 | 9 | 8 | 1.3 | ⌈⊿ d p. |
| 8 | 28.7 | 25.7 | 92 | 79 | 9 | 7 | ------ | d ⊤ a. ⋓ p. |
| 9 | 32 | 26 | 91 | 66 | 10 | 10 | ------ | ⋓ p. |
| 10 | 32.8 | 26.8 | 83 | 69 | 9 | 8 | ------ | |
| 11 | 33 | 26 | 84 | 68 | 9 | 10 | ------ | |
| 12 | 32.8 | 25.5 | 84 | 64 | 8 | 10 | ------ | ⊤ ⋓ p. |
| 13 | 33.3 | 25 7 | 86 | 62 | 10 | 10 | ------ | |
| 14 | 33.6 | 26 | 84 | 70 | 10 | 10 | ------ | |
| 15 | 33.6 | 25.3 | 84 | 54 | 10 | 7 | ------ | |
| 16 | 33 | 22.5 | 96 | 63 | 8 | 7 | ------ | |
| 17 | 33 | 24.6 | 91 | 62 | 10 | 10 | ------ | ⊤ d ⌒° p. |
| 18 | 25.4 | 23.9 | 92 | 92 | 10 | 10 | 6.6 | d a. p. |
| 19 | 28.4 | 22.5 | 99 | 76 | 10 | 7 | ------ | d a. |
| 20 | 31.7 | 24 | 93 | 63 | 10 | 10 | ------ | ⊤ p. |
| 21 | 32.2 | 24.4 | 93 | 61 | 10 | 10 | ------ | ⊤ p. |
| 22 | 30.5 | 24 | 95 | 74 | 10 | 8 | ------ | |
| 23 | 31.4 | 23.9 | 93 | 74 | 10 | 8 | ------ | p a. |
| 24 | 26.7 | 23 6 | 91 | 86 | 8 | 7 | 1.3 | d$^{2}$ a. |
| 25 | 27.9 | 24.4 | 89 | 83 | 7 | 10 | 49.5 | ●$^{2}$ a. |
| 26 | 31.4 | 25 | 85 | 65 | 9 | 8 | ------ | |
| 27 | 32.6 | 24.4 | 91 | 68 | 10 | 10 | ------ | |
| 28 | 32.6 | 25 | 90 | 64 | 9 | 9 | ------ | |
| 29 | 32.8 | 24.4 | 83 | 66 | 7 | 7 | ------ | |
| 30 | 32.1 | 25.1 | 85 | 66 | 7 | 10 | ------ | |
| 31 | 33 | 26 | 85 | 58 | 8 | 9 | ------ | |
| Mean | 31.6 | 24.7 | 90.1 | 68.5 | 8.9 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 58.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28 | 23 | 93 | 84 | 10 | 10 | 14 | |
| 2 | 30 | 24 | 92 | 68 | 10 | 10 | ------ | |
| 3 | 29 | 24 | 84 | 75 | 6 | 10 | 3.8 | |
| 4 | 30 | 25.4 | 89 | 71 | 6 | 10 | 1.3 | |
| 5 | 30 | 25.8 | 87 | 76 | 10 | 10 | 3.8 | |
| 6 | 29.4 | 25.4 | 87 | 78 | 10 | 10 | 3.8 | |
| 7 | 30.2 | 26 | 89 | 71 | 10 | 10 | ------ | |
| 8 | 30 | 26.4 | 84 | 71 | 10 | 10 | 1.3 | |
| 9 | 30 | 25.8 | 84 | 71 | 10 | 10 | 2.5 | |
| 10 | 29 | 24.8 | 86 | 78 | 10 | 10 | 15.2 | |
| 11 | 27 | 24 | 92 | 90 | 10 | 10 | 38.1 | |
| 12 | 28.6 | 23.6 | 89 | 79 | 10 | 10 | 3.8 | |
| 13 | 30.4 | 26 | 86 | 70 | 10 | 10 | ------ | |
| 14 | 31 | 25.4 | 84 | 71 | 10 | 10 | ------ | |
| 15 | 30.4 | 25.2 | 87 | 73 | 10 | 10 | ------ | |
| 16 | 30.8 | 25.4 | 84 | 71 | 10 | 10 | ------ | |
| 17 | 30.2 | 24.4 | 84 | 70 | 10 | 10 | 5.1 | |
| 18 | 29.4 | 24 | 89 | 81 | 10 | 10 | 10.2 | |
| 19 | 27.6 | 24.6 | 90 | 86 | 10 | 10 | 6.4 | |
| 20 | 28.4 | 25 | 90 | 80 | 10 | 10 | 59.7 | |
| 21 | 26.4 | 23.4 | 95 | 93 | 10 | 10 | 38.1 | |
| 22 | 29 | 23.2 | 91 | ------ | 10 | 10 | 38.1 | |
| 23 | 27.8 | 23.8 | 93 | 73 | 10 | 10 | 63.5 | |
| 24 | 26.8 | 23 | 95 | 95 | 10 | 10 | 31.8 | |
| 25 | 29 | 24.4 | 92 | 82 | 10 | 10 | 26.7 | |
| 26 | 27.6 | 24.2 | 91 | 80 | 10 | 10 | 24.1 | |
| 27 | 29 | 23.8 | 92 | 73 | 10 | 10 | 3.8 | |
| 28 | 29.8 | 24.8 | 92 | 71 | 10 | 10 | ------ | |
| 29 | 29.6 | 24 | 92 | 69 | 10 | 10 | 36.8 | |
| 30 | 26.6 | 23 | 95 | 76 | 10 | 10 | 22.8 | |
| 31 | 29.8 | 22.6 | 92 | 75 | 10 | 10 | 45.7 | |
| Mean | 29.1 | 24.5 | 89.4 | 76.7 | 9.7 | 10 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 500.4 | |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | ------ | 98 | ------ | 10 | ------ | ------ | |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | 5.7 | |
| 3 | 30.8 | 23.3 | 97 | 76 | 10 | 10 | 1.3 | ⌒² p² a. |
| 4 | 31.1 | 23.3 | 97 | 72 | 10 | 10 | ------ | ⊍ ⊕ p. |
| 5 | 31.4 | 23 | 98 | 69 | 10 | 10 | ------ | |
| 6 | 32.5 | 22.9 | 97 | 69 | 10 | 5 | ------ | |
| 7 | 31.2 | 22 | 96 | 77 | 10 | 9 | ------ | ⊍ ⊕ p. |
| 8 | 31 | 22 | 93 | 75 | 9 | 10 | ------ | ⊍ ⊕ p. |
| 9 | 34.3 | 23 | 93 | 60 | 10 | 10 | ------ | ⊍ ⊕ p. |
| 10 | 32.9 | 24.1 | 92 | 55 | 9 | 10 | ------ | ⊍ ⊕ p. |
| 11 | 33.1 | 23.5 | 93 | 62 | 10 | 10 | 3 | |
| 12 | 31.7 | 23.6 | 99 | 78 | 10 | 10 | 4.6 | d² a. d a. p. |
| 13 | 28.9 | 23.4 | 94 | 91 | 10 | 10 | 35.8 | d a p. d² ⊤ p. |
| 14 | 30.8 | 22.7 | 97 | 73 | 10 | 8 | 21.6 | ≡ ● a. ●° p. |
| 15 | 31 | 23.5 | 91 | 67 | 10 | 10 | .3 | ●° a. |
| 16 | 31.9 | 22.5 | 97 | 63 | 10 | 10 | ------ | |
| 17 | 32.2 | 22 | 92 | 60 | 10 | 10 | ------ | |
| 18 | 31.3 | 22.5 | 97 | 76 | 10 | 10 | 1 | ●° d ⊤ p. |
| 19 | 30.5 | 23 | 89 | 66 | 10 | 10 | ------ | |
| 20 | 31.5 | 22.9 | 86 | 70 | 10 | 10 | ------ | |
| 21 | ------ | 22.5 | 97 | 68 | 10 | 10 | ------ | |
| 22 | ------ | 22.3 | 80 | 68 | 8 | 8 | 1 | p² p. |
| 23 | ------ | 23 | 97 | 74 | 10 | 10 | ------ | ⊤ p. |
| 24 | ------ | 22.2 | 98 | 82 | 10 | 10 | ------ | |
| 25 | ------ | 22.1 | 87 | 74 | 10 | 10 | ------ | |
| 26 | ------ | 23.8 | 76 | 59 | 10 | 10 | ------ | |
| 27 | ------ | 23 | 88 | 71 | 10 | 10 | ------ | |
| 28 | ------ | 24.5 | 95 | 69 | 10 | 7 | ------ | |
| 29 | ------ | 23 | 88 | 54 | 8 | 8 | ------ | |
| 30 | ------ | 24.9 | 88 | 52 | 10 | 10 | ------ | d° p. |
| 31 | ------ | 23.7 | 84 | 58 | 10 | 10 | ------ | |
| Mean | 31.6 | 23 | 92.5 | 68.6 | 9.8 | 9.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 74.3[1] | |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$= 124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 24 | 89 | 64 | 10 | 10 | ------ | d a. ⊕ ⊍ p. |
| 2 | 32.7 | 24.7 | 86 | 76 | 10 | 9 | 3.6 | ● ⊤ p. |
| 3 | 32 | 25 | 90 | 77 | 8 | 10 | ------ | d° p. |
| 4 | 33.5 | 24.5 | 91 | 60 | 5 | 8 | ------ | ⊍° p. |
| 5 | 33.7 | 24 | 95 | 59 | 8 | 9 | ------ | Ω a. |
| 6 | 34 | 23.7 | 94 | 57 | 5 | 5 | ------ | Ω a. ⊍² p. |
| 7 | 33.4 | 23.8 | 92 | 61 | 9 | 10 | 3.3 | Ω° a. ⊤ d² ϟ p. |
| 8 | 29.2 | 24 | 91 | 82 | 10 | 10 | ------ | ⊤° a. ⊕ p. |
| 9 | 33.4 | 24 | 82 | 65 | 10 | 10 | ------ | ⊍² p. |
| 10 | 34.2 | 25.1 | 84 | 58 | 10 | 10 | ------ | ⊍ p. |
| 11 | 34 | 24.2 | 82 | 65 | 9 | 10 | ------ | |
| 12 | 33.4 | 25 | 86 | 60 | 6 | 9 | ------ | ⊍° p. |
| 13 | 33.8 | 24.2 | 88 | 65 | 10 | 9 | ------ | p° p. |
| 14 | 33.3 | 25 | 84 | 63 | 10 | 9 | ------ | ↙° p. |
| 15 | 33.4 | 24 | 80 | 59 | 10 | 8 | ------ | |
| 16 | 35 | 22.6 | 94 | 63 | 10 | 10 | ------ | |
| 17 | 34.2 | 23.4 | 94 | 58 | 8 | 9 | 5.8 | ⊤ ϟ d p. |
| 18 | 26.4 | 23.5 | 94 | 92 | 10 | 10 | 14.6 | ⊤ a ● d a. p. |
| 19 | 27 | 22.8 | 86 | 85 | 10 | 10 | 6 | d a. d° a. p. |
| 20 | 31.6 | 22.5 | 96 | 66 | 10 | 9 | .8 | ● a. p d° ϟ ⊤ p. |
| 21 | 32.6 | 23.2 | 93 | 65 | 9 | 9 | 7.4 | d° ● ⊤ ϟ p. |
| 22 | 32.4 | 23.5 | 97 | 61 | 10 | 10 | .4 | d° ≡ a. |
| 23 | 32.5 | 23.2 | 93 | 63 | 10 | 10 | 21.8 | Ω² a ⊤° ● ϟ p. |
| 24 | 26.3 | 22.7 | 94 | 85 | 10 | 10 | 20.8 | ↙° ● d a. p. |
| 25 | 31 | 23 | 79 | 73 | 10 | 10 | ------ | ↙° a. p. |
| 26 | 31.7 | 24.2 | 80 | 67 | 10 | 10 | ------ | ↙° a. p. |
| 27 | 33 | 24.6 | 93 | 65 | 10 | 7 | ------ | Ω° a. |
| 28 | 33.4 | 24.4 | 84 | 62 | 6 | 7 | ------ | |
| 29 | 33.5 | 24 | 93 | 56 | 7 | 4 | ------ | Ω° a. |
| 30 | 33.5 | 24 | 77 | 63 | 7 | 9 | ------ | |
| 31 | 33.2 | 25 | 84 | 62 | 10 | 9 | ------ | |
| Mean | 32.4 | 23.9 | 88.5 | 66.4 | 8.9 | 9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 84.5 | |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.1 | 23.9 | 77 | 69 | 10 | 9 | 8.6 | ●° p. |
| 2 | 31.6 | 24.1 | 85 | 74 | 10 | 9 | ------ | |
| 3 | 31.5 | 23.7 | 92 | 67 | 9 | 8 | ------ | |
| 4 | 32.3 | 23.6 | 89 | 64 | 8 | 8 | ------ | |
| 5 | 32.5 | 23.7 | 93 | 64 | 9 | 8 | ------ | |
| 6 | 33.8 | 23.5 | 94 | 60 | 9 | 8 | ------ | |
| 7 | 33.5 | 22.6 | 97 | 58 | 7 | 7 | ------ | |
| 8 | 32 | 23 | 97 | 69 | 7 | 10 | ------ | |
| 9 | 32.3 | 23 | 94 | 63 | 9 | 9 | ------ | |
| 10 | 31.7 | 25 | 92 | 70 | 9 | 9 | ------ | d a. |
| 11 | 31.6 | 22.8 | 93 | 70 | 8 | 9 | ------ | ⊤ a. |
| 12 | 31.9 | 25 | 89 | 69 | 8 | 9 | ------ | d a. |
| 13 | 31.6 | 23.8 | 90 | 71 | 10 | 10 | ------ | |
| 14 | 31.3 | 24.5 | 86 | 70 | 9 | 9 | ------ | |
| 15 | 32.6 | 24.3 | 85 | 66 | 9 | 9 | ------ | |
| 16 | 33.4 | 22.3 | 97 | 64 | 8 | 9 | ------ | |
| 17 | 32.8 | 22.8 | 97 | 63 | 8 | 9 | 3.8 | ●° p. |
| 18 | 28 | 23.5 | 95 | 87 | 10 | 10 | 25.4 | ●° a. d ● p. |
| 19 | 26.6 | 21 | 98 | 82 | 10 | 10 | 1.3 | d a ●° p. |
| 20 | 31.2 | 21.1 | 98 | 70 | 10 | 9 | 2.7 | ●° p. |
| 21 | 32.8 | 21.7 | 98 | 63 | 8 | 8 | 7.7 | ●° p. |
| 22 | 32 | 21.7 | 98 | 69 | 9 | 8 | 26.7 | ● p. |
| 23 | 32.9 | 21.5 | 97 | 74 | 10 | 9 | 19 | ● p. |
| 24 | 25.9 | 22.5 | 98 | 88 | 10 | 10 | 11.1 | ●° a d a. p. |
| 25 | 30.2 | 22.6 | 91 | 79 | 10 | 8 | ------ | d ⊤° a. |
| 26 | 31.5 | 23.4 | 90 | 64 | 9 | 8 | .2 | |
| 27 | 31.2 | 23.8 | 94 | 71 | 9 | 8 | ------ | d a. |
| 28 | 32.1 | 24.5 | 87 | 63 | 8 | 8 | ------ | |
| 29 | 32.5 | 23.7 | 95 | 66 | 8 | 8 | ------ | |
| 30 | 32.4 | 23.9 | 86 | 71 | 8 | 9 | ------ | |
| 31 | 32.5 | 25 | 85 | 69 | 8 | 9 | ------ | |
| Mean | 31.6 | 23.3 | 92.2 | 69.3 | 8.8 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 106.5 | |

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[1] 30 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 27.4 | 24.5 | 81 | 93 | 10 | 10 | 20.8 | ● a. p. |
| 2 | 28.6 | 24.1 | 83 | 83 | 7 | 7 | 9.1 | ● a. p. |
| 3 | 31.6 | 23.1 | 97 | 68 | 6 | 7 | ------ | |
| 4 | 32.8 | 25.4 | 83 | 60 | 6 | 5 | ------ | |
| 5 | 33.2 | 22.3 | 88 | 59 | 5 | 6 | ------ | |
| 6 | 33.3 | 22.1 | 93 | 61 | 4 | 3 | ------ | |
| 7 | 32.3 | 22.1 | 96 | 63 | 4 | 4 | ------ | ⌣ p. |
| 8 | 32.2 | 24.9 | 81 | 68 | 6 | 6 | ------ | ⌣ d p. |
| 9 | 32.4 | 21 | 84 | 70 | 7 | 7 | ------ | ⊤ p. |
| 10 | 32.6 | 26.7 | 84 | 69 | 7 | 7 | ------ | ⊤ p. |
| 11 | 33 | 26.4 | 82 | 61 | 9 | 7 | ------ | |
| 12 | 30.5 | 25 | 84 | 69 | 6 | 7 | 27.5 | p a. ● p. |
| 13 | 29.8 | 22 | 94 | 77 | 9 | 9 | 25.7 | d a. ● p. |
| 14 | 29.7 | 23.1 | 93 | 74 | 10 | 7 | 24.4 | d a. ● p. |
| 15 | 31 | 24.3 | 74 | 64 | 9 | 7 | ------ | |
| 16 | 32.7 | 22.7 | 96 | 60 | 6 | 7 | ------ | ○ p. |
| 17 | 33.5 | 22.7 | 95 | 60 | 4 | 5 | ------ | |
| 18 | 30.7 | 23.8 | 84 | 90 | 7 | 10 | 24.1 | ●² p. |
| 19 | 32.4 | 22.3 | 90 | 63 | 10 | 6 | 4.8 | ● a. p. |
| 20 | 31.4 | 22.5 | 81 | 65 | 6 | 5 | .8 | |
| 21 | 31.3 | 21.2 | 97 | 66 | 9 | 5 | .3 | d ●° ⌒ a. |
| 22 | 32.8 | 21.7 | 95 | 62 | 5 | 6 | ------ | |
| 23 | 31.8 | 21.8 | 93 | 64 | 7 | 6 | ------ | ○ p. |
| 24 | 29.4 | 23.3 | 88 | 71 | 7 | 7 | .5 | ○ p p. |
| 25 | 29.6 | 22.4 | 88 | 82 | 10 | 10 | 4.8 | p a. |
| 26 | 32 | 25.1 | 78 | 65 | 10 | 7 | ------ | ● a. |
| 27 | 31 | 25.1 | 84 | 69 | 9 | 7 | ------ | |
| 28 | 32.9 | 23.7 | 92 | 73 | 9 | 7 | ------ | |
| 29 | 32.8 | 24.2 | 80 | 67 | 4 | 4 | -- | |
| 30 | 32.7 | 25.8 | 78 | 64 | 6 | 6 | 3.3 | ○ p p. |
| 31 | 33 | 25.3 | 84 | 61 | 5 | 7 | ------ | |
| Mean | 31.6 | 23.6 | 87.2 | 68.4 | 7.1 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 146.1 | |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.4 | 20.2 | 97 | 70 | 5 | 10 | 32.5 | Ω ≡ a. ● a. p. |
| 2 | 27.2 | 19.4 | 98 | 72 | 7 | 10 | 10.9 | ● a. p. |
| 3 | 27.8 | 19 | 98 | 69 | 7 | 8 | -------- | d a. p. |
| 4 | 27.2 | 19.5 | 98 | 71 | 2 | 6 | -------- | d p |
| 5 | 27.9 | 20 | 98 | 69 | 4 | 7 | -------- | Ω ≡ a. |
| 6 | 30.5 | 20.4 | 97 | 67 | 2 | 4 | -------- | |
| 7 | 31 | 20.7 | 98 | 66 | 7 | 2 | -------- | |
| 8 | 31.2 | 20.8 | 98 | 65 | 8 | 6 | -------- | Ω ≡ d a. |
| 9 | 31 | 20.1 | 98 | 64 | 8 | 5 | -------- | |
| 10 | 31.1 | 20.4 | 98 | 63 | 2 | 3 | -------- | |
| 11 | 31.1 | 19.5 | 97 | 70 | 7 | 9 | 17.8 | d a. ⊤° ● p. |
| 12 | 30.5 | 19.2 | 98 | 71 | 10 | 10 | 47.2 | ● a ●² p. |
| 13 | 28.2 | 19 | 97 | 72 | 10 | 10 | 12.2 | Ω a. ● a p. |
| 14 | 27.8 | 18.5 | 98 | 71 | 9 | 10 | 63.3 | Ω a. ●² a. p. |
| 15 | 27.5 | 19.4 | 98 | 69 | 10 | 7 | -------- | |
| 16 | 30.1 | 20.2 | 98 | 68 | 2 | 5 | -------- | |
| 17 | 30.8 | 20.5 | 98 | 65 | 4 | 7 | -------- | |
| 18 | 31.1 | 20 | 97 | 70 | 10 | 10 | 24.4 | Ω ≡ a. ● a. p. |
| 19 | 28.5 | 19 | 98 | 69 | 7 | 5 | -------- | |
| 20 | 30.2 | 20.6 | 98 | 68 | 5 | 8 | 15.5 | ⊤° ● p. |
| 21 | 30 | 20 | 97 | 66 | 2 | 2 | -------- | |
| 22 | 31.2 | 20.4 | 98 | 68 | 7 | 8 | -------- | d a p. |
| 23 | 31 | 20 | 98 | 70 | 4 | 8 | 11.7 | Ω ≡ a ● a. p. |
| 24 | 30.3 | 20 | 97 | 69 | 7 | 9 | -------- | d [↯° p. |
| 25 | 29.7 | 21.2 | 98 | 69 | 5 | 8 | 3.6 | d a. ●° p. |
| 26 | 30 | 20 | 98 | 70 | 10 | 8 | 5.6 | ● a. |
| 27 | 29.2 | 20.3 | 97 | 68 | 2 | 2 | -------- | Ω ≡ a. |
| 28 | 30.9 | 21.2 | 98 | 66 | 7 | 8 | 4.1 | ● p. |
| 29 | 30 | 20.7 | 98 | 65 | 5 | 8 | 4.3 | d ●° p. |
| 30 | 29.1 | 20.3 | 98 | 69 | 9 | 5 | 5.3 | ● p. |
| 31 | 29.6 | 20 | 97 | 70 | 6 | 8 | -------- | |
| Mean | 29.7 | 20 | 97.7 | 68.4 | 6.1 | 7 | -------- | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 258.4 | |

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 27 | 22.6 | 97 | 95 | 10 | 10 | 53.8 | ●² p. |
| 2 | 29 | 22.7 | 95 | 90 | 8 | 9 | 25.9 | ●° a. p. p² p. |
| 3 | 29.8 | 22.5 | 94 | 87 | 9 | 9 | 31.8 | ●² [↯ p. |
| 4 | 32 | 22.8 | 91 | 72 | 5 | 7 | 1 | ●° a. Φ p. |
| 5 | 31.5 | 22.5 | 85 | 65 | 6 | 7 | -------- | Ω² a. |
| 6 | 31.7 | 22.9 | 86 | 68 | 5 | 6 | -------- | Ω² a. |
| 7 | 31.3 | 22.8 | 96 | 74 | 5 | 7 | -------- | Ω² a. |
| 8 | 31.1 | 23.6 | 98 | 76 | 7 | 8 | 1.5 | Ω° a. ● p. |
| 9 | 30.3 | 23.7 | 96 | 83 | 10 | 9 | 2.1 | ●° a. p. [↯ p. |
| 10 | 31.3 | 24.2 | 92 | 83 | 10 | 9 | 8.9 | ↙° a. p ● p. |
| 11 | 29.5 | 23 | 92 | 81 | 10 | 9 | 7.4 | ↙° a. p ● p. |
| 12 | 29 | 22.7 | 97 | 91 | 10 | 10 | 93 | ●² a. p. |
| 13 | 26.5 | 22.1 | 96 | 98 | 10 | 10 | 126.2 | ●² a p. |
| 14 | 30 | 23.4 | 97 | 88 | 10 | 9 | 49.2 | ● a. ●² p. |
| 15 | 30.1 | 22.1 | 93 | 70 | 6 | 7 | 5.3 | ● p |
| 16 | 30.3 | 22 | 96 | 71 | 7 | 7 | .8 | ●° p. |
| 17 | 30 | 22.6 | 97 | 86 | 7 | 9 | 7.6 | p [↯ a. ●° p. |
| 18 | 29.3 | 22.2 | 96 | 88 | 9 | 10 | 23.9 | ●² p. |
| 19 | 28.2 | 21.2 | 96 | 93 | 10 | 10 | 26.4 | ●² p |
| 20 | 26.8 | 21.2 | 98 | 84 | 10 | 10 | 53.8 | ●² a. ● p. |
| 21 | 29.5 | 20.5 | 95 | 70 | 8 | 4 | .8 | d a. p. |
| 22 | 31.3 | 20.7 | 96 | 79 | 3 | 7 | -------- | Ω² a. |
| 23 | 31.5 | 2 .7 | 94 | 82 | 7 | 9 | 7.9 | Ω° p² a. ●° p. |
| 24 | 28.6 | 22.5 | 98 | 81 | 9 | 9 | 21.8 | ●² p. |
| 25 | 25.7 | 21.1 | 98 | 92 | 10 | 8 | 6.1 | ●° a. p. |
| 26 | 28.9 | 21.2 | 98 | 80 | 10 | 10 | 3.3 | ● a. |
| 27 | 30.3 | 22.9 | 96 | 75 | 8 | 7 | 1.5 | Ω² a. p° p. |
| 28 | 30.1 | 23 | 98 | 89 | 10 | 10 | 2.5 | ●° p |
| 29 | 30.5 | 24 | 96 | 84 | 7 | 10 | 23.1 | Ω° a. ● p. |
| 30 | 27.5 | 23.5 | 93 | 90 | 10 | 10 | 40.7 | [↯ ●² p. |
| 31 | 31.3 | 22.7 | 93 | 77 | 8 | 8 | -------- | |
| Mean | 29.7 | 22.5 | 94.9 | 82 | 8.2 | 8.5 | -------- | |
| Total | ----- | ------ | ------ | ------ | ------ | ------ | 626.3 | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 28.4 | 23.8 | 85 | 84 | 10 | 10 | 125.4 | ● a. ●² p. |
| 2 | 30.1 | 23.5 | 94 | 83 | 10 | 10 | 20.6 | ● a p ↯ p. |
| 3 | 28.9 | 23.4 | 96 | 86 | 10 | 10 | 45.4 | ⁝ ● a [↯ ●² p. |
| 4 | 31 | 23.5 | 97 | 79 | 10 | 10 | 11.2 | ⊤ a. ● a. p. |
| 5 | 30.7 | 24 | 93 | 76 | 10 | 10 | 9.7 | d ○ a. p. ● p. |
| 6 | 31 | 23.6 | 93 | 74 | 10 | 10 | ------ | d a. ○ ↯ p. |
| 7 | 31.9 | 23 | 95 | 73 | 10 | 8 | ------ | d a. |
| 8 | 30.9 | 22.7 | 95 | 77 | 10 | 10 | 2 | d a. ○ ●° p. |
| 9 | 31.5 | 25.4 | 90 | 78 | 10 | 10 | 2 | p° a. ↯ p |
| 10 | 31 | 26.7 | 86 | 78 | 10 | 10 | ------ | d a p [↯ p. |
| 11 | 31.5 | 26.8 | 84 | 75 | 10 | 0 | 11.9 | d a. [↯ ● p. |
| 12 | 31.4 | 25.5 | 87 | 78 | 10 | 10 | 21 | d a. p [↯ ● p. |
| 13 | 28.5 | 24.5 | 86 | 86 | 10 | 10 | 4.9 | ⊤ a. ● a. p. ↯ p. |
| 14 | 30 | 24.9 | 88 | 88 | 10 | 10 | 40.8 | ● a. p [↯ ⌒ p. |
| 15 | 28 | 23.9 | 90 | 90 | 10 | 10 | 42.5 | ● a. p [↯ p. |
| 16 | 31 | 23.1 | 97 | 74 | 10 | 10 | 8.6 | ⊤° ○ a. ○ ● ↯ p |
| 17 | 30.7 | 23.3 | 97 | 78 | 10 | 10 | 47.8 | ○ ● a. p. [↯ p. |
| 18 | 30 | 22.5 | 91 | 77 | 10 | 10 | 40.5 | ● a. p |
| 19 | 28.5 | 22 | 96 | 89 | 10 | 10 | 7.7 | ⊤° d a ● a. p. |
| 20 | 27 | 22.5 | 96 | 87 | 10 | 10 | 17 | d° a. ● a. p. |
| 21 | 29 | 22.2 | 91 | 74 | 10 | 10 | 5.1 | d ● p. |
| 22 | 30.4 | 22 | 91 | 79 | 4 | 9 | ------ | ↯ p. |
| 23 | 30.5 | 21.9 | 91 | 73 | 8 | 8 | 43.6 | ○ a. [↯² ●² p. |
| 24 | 30.5 | 22.3 | 97 | 74 | 10 | 10 | 24.1 | ○° a. p. ● p. |
| 25 | 27 | 21.7 | 96 | 90 | 10 | 10 | 28 | ● a. p. |
| 26 | 30.1 | 23 | 84 | 80 | 10 | 10 | 14.8 | ● a p. ○° p. |
| 27 | 31 | 24.4 | 93 | 77 | 10 | 10 | 12.3 | d ○² a p. ● p. |
| 28 | 30.4 | 24 | 95 | 93 | 10 | 10 | 23.7 | d a ● a p |
| 29 | 30.4 | 24.5 | 89 | 85 | 10 | 10 | 10.1 | ●° ⌉ a ● [↯ p. |
| 30 | 27.4 | 24.5 | 89 | 89 | 10 | 10 | 51.5 | ● a. p [↯ p. |
| 31 | 30 | 23 | 89 | 84 | 10 | 10 | 12.7 | ● a. p. ↯ p. |
| Mean | 30 | 23.6 | 91.6 | 80.9 | 9.7 | 9.8 | ------ | |
| Total | ------ | ------ | ----- | ------ | ------ | ------ | 684.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 26.6 | 24 | 97 | 90 | 10 | 10 | 23.3 | d a. p. ● p. |
| 2 | 29.7 | 23 | 97 | 77 | 10 | 10 | 2.8 | ● d a. p. ⊤ p. |
| 3 | 31.2 | 24.2 | 97 | 84 | 10 | 9 | 3 | d a. p. |
| 4 | 32 | 23.6 | 97 | 64 | 9 | 4 | ------ | Ω d a. |
| 5 | 33.5 | 23.6 | 96 | 57 | 7 | 3 | ------ | Ω a. |
| 6 | 33.2 | 23 | 95 | 55 | 3 | 7 | ------ | Ω ≡° a. |
| 7 | 35 | 23.2 | 97 | [illegible] | 9 | 9 | ------ | Ω a. |
| 8 | 34.2 | 22.5 | 94 | 60 | 9 | 10 | ------ | Ω a. |
| 9 | 33 | 22.8 | 97 | 69 | 3 | 10 | 5.6 | Ω ≡ a. ⊤ ● p. |
| 10 | 33.7 | 24.8 | 96 | 67 | 10 | 10 | 2 | Ω a. d p. |
| 11 | 30.5 | 23.6 | 97 | 88 | 9 | 8 | 9.4 | Ω a. ● a. p. ⊤ p. |
| 12 | 31.8 | 24.4 | 97 | 66 | 9 | 9 | .5 | Ω a. d p. |
| 13 | 29.4 | 23.8 | 95 | 90 | 10 | 10 | 12.9 | Ω ≡° a. ● d a. p. |
| 14 | 30.2 | 23.6 | 97 | 66 | 10 | 10 | 26.4 | Ω a ● d a. p. |
| 15 | 29.6 | 23.3 | 97 | 77 | 10 | 9 | 4.8 | ● d a. p. |
| 16 | 32.7 | 23.5 | 94 | 58 | 10 | 9 | ------ | Ω a. |
| 17 | 31.5 | 23.2 | 97 | 81 | 10 | 9 | ------ | Ω ≡ d° a. |
| 18 | 31.5 | 22.6 | 96 | 92 | 3 | 10 | 25.4 | Ω a. ● a. p. d p. |
| 19 | 30.6 | 22.5 | 97 | 91 | 10 | 10 | 50.1 | Ω a. ● a. p. |
| 20 | 30.2 | 22.8 | 97 | 93 | 9 | 10 | 7.3 | Ω ≡ a. ● p. |
| 21 | 31 | 23 | 95 | 77 | 10 | 10 | ------ | Ω a. d° p. |
| 22 | 32.4 | 22.3 | 97 | 66 | 3 | 9 | 3.3 | Ω ≡ a. ● p. |
| 23 | 33.6 | 21.8 | 97 | 61 | 4 | 3 | ------ | Ω ≡ a. ⊤ d p. |
| 24 | 30.3 | 22.6 | 96 | 77 | 9 | 10 | 8.9 | Ω ≡ a. ● d p. |
| 25 | 29.5 | 22.6 | 98 | 67 | 10 | 10 | 10.2 | Ω a d² a. p. |
| 26 | 31 | 23.2 | 97 | 75 | 10 | 10 | 2.3 | Ω d² a. |
| 27 | 32.6 | 23.1 | 95 | 58 | 2 | 9 | ------ | Ω a. |
| 28 | 32.5 | 24.5 | 94 | 65 | 9 | 9 | 1.3 | Ω d a. d° p. |
| 29 | 31.5 | 24 | 96 | 73 | 10 | 9 | 1 | Ω a. d° a. p. |
| 30 | 30.4 | 23.7 | 97 | 91 | 8 | 10 | 8.3 | Ω ≡ a. d² a. p. |
| 31 | 31.6 | 21 8 | 94 | 69 | 10 | 10 | 6.4 | Ω d a. ● p. |
| Mean | 31.5 | 23.2 | 96.2 | 73 | 8.2 | 8.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 215.2 |  |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28.2 | 24.1 | 88 | 81 | 10 | 10 | 0.8 | d² a. |
| 2 | 31.9 | 23.4 | 93 | 85 | 10 | 10 | 4 | ● p. |
| 3 | 32.7 | 23.8 | 96 | 74 | 10 | 8 | .1 | Ω° ≡° a. d p. |
| 4 | 32.8 | 23.8 | 92 | 78 | 10 | 10 | ------ | Ω a. d ↯ ψ p. |
| 5 | 33.7 | 22.8 | 92 | 58 | 10 | 9 | ------ |  |
| 6 | 33.4 | 24 8 | 88 | 60 | 10 | 10 | ------ |  |
| 7 | 34.8 | 24.2 | 85 | 56 | 10 | 2 | ------ | d ↯ ⊤ p. |
| 8 | 35.2 | 24.5 | 81 | 54 | 6 | 8 | ------ | ⌒ d ↯ ⊤ p. |
| 9 | 30 | 26.4 | 76 | 74 | 10 | 10 | 1.8 | d ψ p. |
| 10 | 32.5 | 25.5 | 85 | 67 | 10 | 10 | 2 | ● d² a. d ψ p. |
| 11 | 34.5 | 25.3 | 80 | 61 | 10 | 8 | ------ | d p |
| 12 | 33 | 24.7 | 92 | 67 | 10 | 7 | 1.3 | d² p. |
| 13 | 33.2 | 24.5 | 88 | 68 | 10 | 9 | ------ |  |
| 14 | 33.3 | 24.5 | 83 | 64 | 10 | 9 | ------ | d p. |
| 15 | 32.5 | 25 | 85 | 64 | 10 | 7 | ------ | d a. |
| 16 | 33.9 | 23.9 | 84 | 57 | 10 | 9 | ------ | ↯ p. |
| 17 | 35.6 | 24.7 | 82 | 56 | 10 | 7 | ------ | ↯ p. |
| 18 | 33.6 | 24.5 | 82 | 69 | 10 | 10 | 3 | ⊤ ● p. |
| 19 | 32 | 23.4 | 86 | 68 | 10 | 9 | 12.7 | ● ↯ ⊤ p. |
| 20 | 31.4 | 23.2 | 90 | 82 | 10 | 10 | 31.5 | d ● p. |
| 21 | 31.7 | 21.5 | 96 | 66 | 10 | 5 | ------ | ↯° p. |
| 22 | 31.6 | 21.9 | 92 | 70 | 9 | 7 | 7.1 | Ω a. ● ↯ p. |
| 23 | 32.1 | 22.7 | 96 | 67 | 10 | 2 | ------ | Ω ≡° a. |
| 24 | 33.1? | 24 | 87 | 90 | 10 | 10 | 8.9 | d a. p. ● p. |
| 25 | 29.9 | 23.1 | 90 | 73 | 10 | 10 | 1.3 | p p. |
| 26 | 32.5 | 25.6 | 70 | 60 | 10 | 10 | ------ |  |
| 27 | 33.4 | 24.5 | 81 | 58 | 10 | 10 | ------ | ⊕ p. |
| 28 | 32.9 | 24.4 | 83 | 65 | 10 | 7 | ------ | ⊤ d ⌒ p. |
| 29 | 33.2 | 25.7 | 84 | 72 | 8 | 10 | ------ | ⌒ a. d ⊤ p. |
| 30 | 31.8 | 25.4 | 80 | 83 | 10 | 10 | .3 | ● ⊤ d p. |
| 31 | 34.4 | 25.3 | 78 | 61 | 10 | 9 | 3.6 | d ● ⊤ ↯ ↙° p. |
| Mean | 32.7 | 24.2 | 86 | 68 | 9.8 | 8.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 78.4 |  |

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | ------ | 22 3 | 98 | 99 | 10 | 10 | 183.1 | ●² a. p. |
| 2 | ------ | 22.1 | 94 | 68 | 10 | 9 | 18.5 | ●° a. ● p. |
| 3 | ------ | 23.1 | 95 | 80 | 10 | 9 | 25.6 | ● a. d a. p. ●° p. |
| 4 | ------ | 24.2 | 85 | 75 | 3 | 9 | 6.6 | ●° ⊤° p. |
| 5 | ------ | 23.8 | 96 | 65 | 9 | 5 | ------ |  |
| 6 | ------ | 24.2 | 91 | 61 | 4 | 6 | ------ | ↯ ψ p. |
| 7 | ------ | 25.1 | 91 | 70 | 10 | 6 | ------ |  |
| 8 | ------ | 24.6 | 96 | 82 | 7 | 8 | 1.5 | Ω d° a. |
| 9 | ------ | 24.9 | 89 | 90 | 8 | 9 | 56.6 | d° a. p. ●² ⌈↯² p. |
| 10 | ------ | 24.6 | 94 | 87 | 10 | 10 | 2.8 | ⊤ a. d° a. p. |
| 11 | ------ | 24.4 | 94 | 82 | 10 | 10 | 4.8 | d° p. |
| 12 | ------ | 23.9 | 88 | 93 | 10 | 10 | 95.7 | d ● a. ●² p. |
| 13 | ------ | 22.5 | 97 | 93 | 10 | 10 | 78.5 | d ⊤ a. p. ●² ⌈↯² |
| 14 | ------ | 22.2 | 97 | 91 | 10 | 10 | 65.6 | ● a. p |
| 15 | ------ | 22.8 | 92 | 88 | 10 | 10 | 19.1 | d a. ●° a. p. |
| 16 | ------ | 24.5 | 88 | 72 | 10 | 7 | 2 | d a ● p. |
| 17 | ------ | 24.4 | 92 | 69 | 8 | 8 | 36.1 | d ●° a. ⊤° ● p. |
| 18 | ------ | 23 | 90 | 73 | 9 | 8 | 21.6 | d° a. ◯° ● p. |
| 19 | ------ | 22.7 | 91 | 77 | 8 | 7 | .5 | d p. |
| 20 | ------ | 23.8 | 91 | 86 | 8 | 10 | 16.3 | d° a. d ●° p. |
| 21 | ------ | 21.6 | 96 | 68 | 3 | 6 | 53.8 | ⊕ a. ●² ⌈↯² p. |
| 22 | ------ | 21.3 | 96 | 71 | 2 | 6 | 13 | ● ⊤ ⌒² p. |
| 23 | ------ | 21.8 | 98 | 77 | 7 | 7 | ------ |  |
| 24 | ------ | 23.5 | 97 | 83 | 8 | 10 | 50.1 | Ω d° a. d ●² p. |
| 25 | ------ | 23 | 96 | 98 | 10 | 10 | 74.6 | ↙° a. d a. p. ● p. |
| 26 | ------ | 23.8 | 90 | 92 | 10 | 10 | 20.5 | ↙° a. ● a. p. |
| 27 | ------ | 24.6 | 91 | 70 | 10 | 10 | ------ | ◯² p. |
| 28 | ------ | 24 | 91 | 82 | 10 | 9 | 18.3 | ● p. |
| 29 | ------ | 23.9 | 95 | 88 | 10 | 10 | 55.4 | ● ⌈↯² a. |
| 30 | ------ | 24.4 | 97 | 78 | 7 | 9 | 3 | ●² d° a. ●° p. |
| 31 | ------ | 23.7 | 91 | 88 | 10 | 10 | 69.6 | ●° a. d ●² ⌈↯ p. |
| Mean | ------ | 23.5 | 93.1 | 80.5 | 8.4 | 8.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 993.2 |  |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 26.7 | 22.6 | 98 | 76 | 10 | 10 | 2.5 | d² a. d p. |
| 2 | 34.6 | 24.4 | 89 | 81 | 10 | 5 | .5 | ⊕° a. ⌒° ψ² d² p. |
| 3 | 34.9 | 23.6 | 95 | 54 | 10 | 4 | ------ | ⊤° ↯° p. |
| 4 | 35.8 | 23.3 | 95 | 54 | 3 | 6 | 1.8 | Ω² a. ⌈↯° d° p. |
| 5 | 35.2 | 23.3 | 99 | 58 | 8 | 8 | ------ | d² ◯° ⊕² a. ⌈↯° p. |
| 6 | 34.9 | 24 | 97 | 55 | 10 | 9 | ------ | Ω² ◯° a. ⌈↯° d° p. |
| 7 | 34.8 | 22.8 | 97 | 57 | 10 | 3 | 7.6 | ⌈↯° ● p. |
| 8 | ------ | 23.7 | 97 | ------ | 6 | ------ | ------ | ≡° ◯° a. |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 10 | 29.7 | 23.8 | 97 | 75 | 10 | 10 | .8 | ⌒° d° a. d p. |
| 11 | 34.2 | 23.8 | 97 | 58 | 10 | 8 | ------ | d ≡° ⊤° a. ⊕° ⊤° p |
| 12 | 35.4 | 23.8 | 97 | 56 | 10 | 8 | ------ | ◯° a. p. ⌈↯° ψ° p. |
| 13 | 36 | 23.4 | 97 | 57 | 10 | 9 | 4.1 | ◯ ⊤° a. ⊤° d² ψ° p |
| 14 | 35.6 | 23.6 | 98 | 54 | 10 | 4 | ------ | ≡ a. |
| 15 | 34.9 | 23.9 | 97 | 53 | 10 | 7 | ------ | Ω° ◯² a. ⊕° p. |
| 16 | 35 | 22.2 | 97 | 53 | 7 | 7 | 5.8 | ◯° a. p ⌈↯° ●° p. |
| 17 | 34.3 | 23.3 | 99 | 59 | 10 | 8 | 5.6 | ≡² a. ⌈↯° ●° p. |
| 18 | 32.8 | 22.3 | 98 | 63 | 9 | 9 | 10.7 | ◯² ⊤ a. ◯° ⌈↯° ● |
| 19 | 32.3 | 22.7 | 97 | 62 | 10 | 8 | 4.3 | ◯° ⊤° a p. d² ↯° p |
| 20 | 29.8 | 22.9 | 99 | 88 | 10 | 10 | 1.8 | ≡² d° ◯° a. d² p. |
| 21 | 33.1 | 22.4 | 99 | 61 | 10 | 4 | .8 | ≡² ⊕° a. ↯° d² p. |
| 22 | 34.5 | 22.3 | 98 | 55 | 3 | 4 | ------ | ↯° d° p. |
| 23 | 33.9 | 22.3 | 98 | 55 | 10 | 7 | ------ | ◯² a. ⌈↯° p. |
| 24 | 25.7 | 22.5 | 97 | 95 | 10 | 10 | 46 | Ω° d² a ● p. |
| 25 | 30.1 | 21.8 | 100 | 75 | 10 | 10 | 13.8 | ●° a. p. ◯° p. |
| 26 | 31.3 | 22.7 | 99 | 64 | 10 | 10 | ------ | d² a. |
| 27 | 34.4 | 21.7 | 97 | 54 | 10 | 10 | ------ | Ω² a. ◯² a. p. |
| 28 | 35.4 | 22.1 | 97 | 57 | 10 | 7 | 23.6 | Ω² ◯° a. ●² ⌈↯° p. |
| 29 | 30.9 | 23.1 | 98 | 73 | 10 | 9 | ------ | ≡ d° a. |
| 30 | 34.4 | 23.1 | 98 | 57 | 10 | 10 | ------ | Ω° a. ◯² a. p. ψ² p. |
| 31 | 33.3 | 23.3 | 80 | 58 | 10 | 10 | ------ | Ω° a. ◯² a. p. |
| Mean | 33.2 | 23 | 96.7 | 62.7 | 9.2 | 7.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 129.7 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CANDON.

[$\phi=17° 12'$ N; $\lambda=120° 26'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 24.7 | 24 | 95 | 99 | 10 | 10 | 387.1 | ↙° ●² a. p. |
| 2 | 29.7 | 23 | 95 | 79 | 10 | 10 | 16 | d a. ● p. |
| 3 | 29.2 | 24.1 | 93 | 79 | 10 | 9 | 9.4 | ● a. p. |
| 4 | 29.5 | 25.2 | 89 | 85 | 9 | 10 | 13.2 | ● a. p. ☈° p. |
| 5 | 30.4 | 25.2 | 88 | 74 | 10 | 10 | ------ | ☇ p. |
| 6 | 31.1 | 25 | 90 | 69 | 10 | 9 | ------ | Ω² a. ☇ p. |
| 7 | 31.1 | 26 | 88 | 72 | 10 | 2 | ------ | ☇ p. |
| 8 | 30.4 | 25.6 | 88 | 79 | 9 | 9 | 6.1 | Ω² a. d p. |
| 9 | 27.9 | 25.5 | 87 | 92 | 10 | 10 | 216.2 | ⊤°●²a.☈ ●²p. |
| 10 | 27.3 | 24.4 | 96 | 92 | 10 | 10 | 110 | ⊤° ●²a.p.☈²p. |
| 11 | 29.4 | 25.2 | 94 | 85 | 10 | 10 | 63 | d a. p. ●² p. |
| 12 | 28.8 | 25.1 | 93 | 85 | 10 | 10 | 81 | ●² a. p. ⊤° p. |
| 13 | 27 | 24.2 | 93 | 93 | 10 | 10 | 274.8 | ●² a. p. ☈° p. |
| 14 | 27.7 | 23.4 | 96 | 88 | 10 | 10 | 40.4 | ● ⊤° a.p. ☈° p. |
| 15 | 28.3 | 24.6 | 92 | 85 | 9 | 10 | 1.3? | p a. |
| 16 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 17 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 18 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 19 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 20 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 21 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 22 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 23 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 24 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 26 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 27 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 28 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 31 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| Mean | 28.8 | 24.7 | 91.8 | 83.7 | 9.8 | 9.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### LAOAG.

[$\phi=18° 12'$ N; $\lambda=120° 35'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 26.8 | 24 | 96 | 99 | 10 | 10 | 153.5 | ↙° ●² a. p. |
| 2 | 31.8 | 23.3 | 81 | 70 | 10 | 10 | 26.7 | d° a. ● p. |
| 3 | 32.2 | 22.6 | 95 | 80 | 10 | 10 | 3.8 | d² ☇ p. |
| 4 | 30.7 | 24.4 | 94 | 76 | 8 | 10 | 16.5 | ● p. |
| 5 | 31.8 | 24.1 | 97 | 66 | 7 | 8 | ------- | ⊍² p. |
| 6 | 32.2 | 24.5 | 92 | 66 | 10 | 9 | ------- |  |
| 7 | 31.8 | 24.3 | 93 | 65 | 8 | 6 | ------- |  |
| 8 | 31.3 | 23.9 | 92 | 71 | 6 | 10 | 2.3 |  |
| 9 | 29.9 | 25.4 | 97 | 79 | 10 | 10 | 58.9 | ● a. ☈ ●² p. |
| 10 | 27 | 24.1 | 95 | 98 | 10 | 10 | 76.3 | ●² a. p. |
| 11 | 27.6 | 24.2 | 93 | 92 | 10 | 10 | 94.9 | ●² a. p. |
| 12 | 26.7 | 22.4 | 97 | 98 | 10 | 10 | 141.7 | ●² a. p. |
| 13 | 27 | 23 | 99 | 98 | 10 | 10 | 78.7 | ●² a. p. |
| 14 | 25.4 | 23.1 | 97 | 96 | 10 | 10 | 63 | ● a. p. |
| 15 | 30.8 | 23.6 | 91 | 78 | 10 | 10 | ------- |  |
| 16 | 30.6 | 24.8 | 88 | 68 | 10 | 10 | ------- |  |
| 17 | 31.4 | 23.6 | 94 | 68 | 3 | 9 | 1.5 | ●° p. |
| 18 | 31.3 | 24.2 | 87 | 75 | 3 | 9 | 2.5 | ●° p. |
| 19 | 31.4 | 22.9 | 97 | 67 | 10 | 8 | 3 | ●° p. |
| 20 | 30.8 | 23.4 | 97 | 74 | 5 | 9 | 1.5 | d² p. |
| 21 | 31 | 23.6 | 95 | 70 | 0 | 7 | 2.5 | ●° p. |
| 22 | ------ | ------ | ------ | ------ | ------ | ------ | ------- |  |
| 23 | 31.3 | 23.2 | ------ | 71 | ------ | 5 | ------- |  |
| 24 | 29.9 | 22.8 | 97 | 91 | 7 | 10 | 125.4 | Ω a. ●² p. |
| 25 | 27.2 | 23.2 | 99 | 94 | 10 | 10 | 135.8 | ●² a. p. ↙° p. |
| 26 | 27.1 | 24 | 98 | 98 | 10 | 10 | 67.8 | ↙° ● a. p. |
| 27 | 29.9 | 23.6 | 91 | 76 | 10 | 10 | ------- |  |
| 28 | 30.7 | 23.3 | 96 | 77 | 10 | 10 | .8 | d² p. |
| 29 | 31.3 | 24.7 | 98 | 74 | 7 | 7 | 3.8 | d² p. |
| 30 | 29.9 | 25.5 | 93 | 73 | 10 | 10 | 3.3 | d a. |
| 31 | 28.4 | 23.1 | 98 | 85 | 10 | 10 | 97.7 | ●² ☈ a. ● p. |
| Mean | 29.8 | 23.8 | 94.4 | 79.8 | 8.4 | 9.2 | ------- |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1,161.9[1] |  |

### SANTO DOMINGO.

[$\phi=20° 28'$ N; $\lambda=121° 59'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 29.8 | 24.8 | 83 | 79 | 10 | 7 | 15 | ↙° ● d a.p. ◯° p. |
| 2 | 31.1 | 26.5 | 86 | 73 | 8 | 7 | ------ | ◯° Ω p. |
| 3 | 31.1 | 23.5 | 93 | 76 | 1 | 4 | ------ | Ω p. |
| 4 | 31.9 | 24.7 | 95 | 90 | 7 | 10 | 24.9 | d a. ● ☇ ⊤ p. |
| 5 | 31 | 23.8 | 96 | 76 | 10 | 6 | .4 | d p. |
| 6 | 30.5 | 23.8 | 90 | 78 | 9 | 8 | ------ | ◡ p. |
| 7 | 30 | 25.1 | 90 | 81 | 7 | 8 | .2 | d² p. |
| 8 | 29.2 | 25.8 | 94 | 82 | 8 | 8 | 33.3 | ●° a. ● p. |
| 9 | 27.4 | 23.8 | 93 | 87 | 10 | 10 | 38.1 | ● a.p.d° ↙° p. |
| 10 | 27 | 24.6 | 92 | 91 | 10 | 10 | 51.8 | ↙° ● a. p. ☇° p. |
| 11 | 27.5 | 24.3 | 92 | 92 | 10 | 10 | 25.9 | ● p. |
| 12 | 27.7 | 24 | 90 | 88 | 10 | 9 | 13 | ●° a. d ● p. |
| 13 | 27.3 | 24.7 | 91 | 88 | 10 | 10 | 38.9 | ● d a. p. ●² p. |
| 14 | 27.2 | 24.2 | 93 | 90 | 10 | 10 | 28.4 | d a. ● a. p. ↙° p. |
| 15 | 29.6 | 23.9 | 94 | 81 | 9 | 7 | 4 | ⊕ ● p. |
| 16 | 30 | 26.4 | 83 | 76 | 7 | 7 | ------ |  |
| 17 | 29.9 | 26.6 | 86 | 79 | 5 | 5 | ------ |  |
| 18 | 30 | 26.3 | 86 | 81 | 7 | 6 | ------ | d. p. |
| 19 | 30.4 | 25.4 | 85 | 80 | 7 | 7 | .2 |  |
| 20 | 30.1 | 25.3 | 88 | 80 | 8 | 7 | 6.4 | d² ⌒° ● a. Ω p. |
| 21 | 31.2 | 23.1 | 88 | 78 | 0 | 8 | 6.1 | Ω a. d ● ☇ p. |
| 22 | 31.4 | 25.8 | 92 | 75 | 7 | 4 | ------ | ● ⌒° d° a. Ω p. |
| 23 | 31.8 | 24.3 | 93 | 70 | 1 | 4 | ------ | d° Ω p. |
| 24 | 30.8 | 25.3 | 86 | 79 | 5 | 4 | 6.1 | ● p. |
| 25 | 29 | 25.3 | 87 | 83 | 8 | 8 | 63 | d a. p. |
| 26 | ------ | ------ | ------ | ------ | 10 | 10 | 142.2 | ↙² ●² a. p. |
| 27 | ------ | ------ | ------ | ------ | 10 | 10 | ------ |  |
| 28 | ------ | ------ | ------ | ------ | 10 | 10 | 1.3 | ● p. |
| 29 | ------ | ------ | ------ | ------ | 7 | 8 | 11.4 | ☇° d p. |
| 30 | ------ | ------ | ------ | ------ | 10 | 9 | 1.8 | ● a. ⊤ p. |
| 31 | ------ | ------ | ------ | ------ | 10 | 10 | 4 | ● a. ↙° a. p. d° p. |
| Mean | 29.7 | 24.9 | 89.8 | 81.3 | 7.8 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 516.4 |  |

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[1] 30 days of observation.

# SEISMOLOGICAL BULLETIN FOR AUGUST, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

4, $9^h$ $15^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III. This disturbance is undoubtedly identical with the one registered at Manila at $9^h$ $16^m$ $35^s$ and at Batavia at $9^h$ $18^m$ $26^s$, whose center was to the northeast of Celebes Sea.

12, $18^h$ $10^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

13, $9^h$ $10^m$. **Ormoc** (W of Leyte). Oscillatory earthquake of force III; direction SE–NW, intensity III.

13, $13^h$ $57^m$ $30^s$.* **Mindoro Island.** Earthquake of intensity III, felt at the stations of Calapan, in the northeast, and San Jose, in the south-southwest of the island. Its origin lay probably within the island, making it perceptible throughout the same, but especially in the central and western parts.

15, $12^h$ $3^m$. **Romblon.** Oscillatory earthquake preceded by subterranean noises (II Davison). Direction NE–SW, intensity III, duration 3 seconds.

17, $6^h$ $45^m$ $22^s$.* **Yap** (Western Carolines). Earthquake of intensity V, lasting 30 seconds. It was registered by all the seismographs in the Far East and Europe. Its origin appears to have been at some distance east-northeast of Yap, in the vicinity of meridian 140° east and the parallel 10° north. Within the epicentral region the quake must have been very severe, if we may judge from the great amplitude and long duration of the movement as registered by the seismographs of Manila, Taihoku (Formosa), and other observatories situated more than 2,000 kilometers from the center of disturbance.

17, $15^h$ $53^m$ $40^s$.* **Batanes Islands and Northern Luzon.** Earthquake of force IV at Santo Domingo (Batanes) and force III at Laoag (Ilocos Norte) and Aparri (Cagayan). At Santo Domingo it was accompanied by subterranean noise. Its origin lay west of Bashi Channel. The disturbance seems to have been registered nowhere except at Manila and Taihoku; hence, it could hardly have had great intensity in the epicentral region, despite the fact that it was perceptible from northern Luzon to southern Formosa, which represents an area having a length of 500 kilometers in the direction N–S.

19, $8^h$ $5^m$ $1^s$. **Southeastern Luzon.** Earthquake of intensity V–VI, perceptible in the Catanduanes, the entire Province of Albay, and eastern Camarines. At Virac (Catanduanes) were observed oscillatory movements of force V in the direction W–E, with three repetitions or aftershocks during the day; at Legaspi (Albay) oscillations of force IV in the direction N–S; while at Nueva Caceres (Camarines) only movements of intensity II–III were felt during some 5 seconds. The origin of this earthquake was approximately 330 kilometers from Manila, in the northeastern part of Lagonoy Gulf, not far from 124° longitude east and 13.7° latitude north. The phenomenon does not seem to have been registered outside of the Philippines.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

20, 7$^h$ 54$^m$ 6$^s$. **Southeastern Luzon.** Earthquake of intensity IV, proceeding from the same center as the one of the 19th.

21, 7$^h$ 30$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

22, 8$^h$ 10$^m$. **Nueva Caceres** (Camarines). Oscillatory earthquake; direction SW–NE, intensity II–III, duration 4 seconds.

22, 9$^h$ 20$^m$ 58$^s$.* **Southeastern Luzon.** Earthquake of intensity III, due to the center indicated before, and felt on Catanduanes Island and in part of Albay and Camarines Provinces. At 12$^h$ 9$^m$ 18$^s$ * took place a repetition of force III.

At 13$^h$ 32$^m$ 52$^s$ * occurred a second earthquake of intensity V, proceeding from the same epicenter and perceptible throughout the same region, which was followed by a repetition of force III at 14$^h$ 12$^m$ 28$^s$.*

At 14$^h$ 26$^m$ 52$^s$ * the aforementioned territory was shaken by the most intense and widely extented quake of the series. This shock developed force VI–VII on Catanduanes, at a distance of about 40 kilometers from the epicenter indicated before, and of IV–V in Albay and northeastern Camarines. It was followed by several repetitions of small importance which were perceptible only in Virac (Catanduanes). The report of the latter station states that during that day as many as thirteen distinct earthquakes have been counted, of which five were of greater importance. The latter have all been registered at Manila; but outside of the Archipelago only the last mentioned has been recorded, in Formosa and Batavia.

22, 18$^h$ 35$^m$ 33$^s$.* **Aparri** (NE of Luzon). Oscillatory earthquake; direction NE–SW, intensity III, duration 8 seconds.

23, 4$^h$ 23$^m$ 20$^s$.* **Nueva Caceres** (Camarines). Earthquake of intensity II–III, direction E–W. A repetition at 17$^h$ 12$^m$ 17$^s$ * had the same direction, but less intensity. The origin of both quakes lay undoubtedly in the western part of Camarines Province, more than 70 kilometers west of the epicenter of the disturbances on the 19th, 20th, and 22d.

24, 9$^h$ 5$^m$. **Paracale** (NW of Camarines, Luzon). Trepidatory earthquake of intensity IV, lasting barely 2 seconds, and accompanied by a detonation resembling artillery fire which seemed to come from southeast.

24, 11$^h$ 42$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

NOTE.—The foregoing list does not include the perceptible repetitions or aftershocks originating in the Agusan Valley, since these have already been published in the Bulletin for July.

## RECORDS OF THE MICROSEISMOGRAPHS.

**(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.h)**

| No. | Date. | Character. | Instrument and component. | Beginning. |  |  | Maximum range of motion. |  |  | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. |  |  |
|  |  |  |  | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* |  |
| 173 | 2 | $I_r$ | V. | 8 44 19 | 8 46 12 | 8 48 10 | 8 50 43 | 0.01 | 11.2 | 9 21 | Origin near SW of Formosa. |
| 174 | 4 | $I_r$ | V. | 9 16 35 | 9 18 36 | 9 20 36 | 9 21 14 | .03 | 6 | 10 06 | Origin NE of Celebes Sea. |
|  |  |  | H. WSW | 9 16 36 | 9 18 58 | 9 20 16 | 9 23 13 | .15 | 9 | 10 33 |  |
| 175 | 8 | $I_r$ | H. WSW | 22 30 03 | 22 33 45 | 22 37 39 | 22 38 36 | .08 | 9 | 23 22 | Origin the Inland Sea of Japan. |
| 176 | 9 | $I_r$ | H. WSW | 2 23 47 | ----- | ----- | ----- | ----- | ----- | 3 04 |  |
|  |  |  | W. E | 2 23 47 | ----- | ----- | ----- | ----- | ----- | 2 56 |  |
| 177 | 9 | $I_d$ | V. | 14 47 56 | ----- | 14 48 15 | 14 48 17 | .62 | 2.4 | 14 52 | Vertical Component 0.16 mm. |
| 178 | 10 | $I_r$ | H. WSW | ----- | 11 08 33 | ----- | ----- | ----- | ----- | 11 35 |  |
| 179 | 10 | $I_d$ | V. | 13 18 30 | ----- | 13 18 49 | 13 18 55 | .14 | 2.4 | 13 22 | V. C. 0.03 mm. |
| 180 | 13 | $II_v$ | V. | 13 57 30 | ----- | 13 57 46 | 13 58 21 | 1.80 | 2.4 | 14 24 | V. C. 1.93 mm. Eqke., III Mindoro Island. |
| 181 | 14 | $I_d$ | V. | 8 15 35 | ----- | 8 15 48 | 8 16 01 | .80 | 1 | 8 20 | V. C 0.80 mm. |
| 182 | 15 | $I_v$ | V. | 4 54 34 | ----- | 4 56 33 | 4 57 07 | .12 | 2.4 | 5 10 | Agusan Valley, eastern Mindanao. |
|  |  |  | H. NNW | 4 54 39 | ----- | 4 56 38 | 4 58 43 | .27 | 7.5 | 5 15 |  |
| 183 | 17 | $II_r$ | V. | 6 45 22 | 6 50 07 | 6 53 37 | 6 57 15 | .27 | 9.6 | 9 00 | V. C. 0.21 mm. Origin Carolines Group. |
|  |  |  | H. NNW | 6 45 22 | 6 49 54 | 6 53 34 | 6 57 10 | 3.13 | 9 | 9 10 |  |
|  |  |  | W. N | 6 45 22 | 6 49 47 | 6 53 32 | 6 57 26 | .18 | 8 | 9 05 |  |
| 184 | 17 | $I_v$ | V. | 15 53 40 | ----- | 15 55 05 | 15 55 28 | .08 | 2.4 | 16 00 | V. C. 0.03 mm. Origin Bashi Channel. |
| 185 | 18 | $II_v$ | V. | 10 56 30 | ----- | 10 58 16 | 11 00 02 | .29 | 2.4 | 11 57 | V. C. 0.02 mm. Origin north of the Agusan River Valley. |
|  |  |  | H. WSW | 10 56 30 | ----- | 10 58 05 | 10 59 30 | 1.47 | [illegible].8 | 12 17 |  |
| 186 | 18 | $I_d$ | V. | 17 29 38 | ----- | 17 30 33 | 17 30 49 | .18 | 2.4 | 17 40 | V. C. 0.01 mm. |
| 187 | 19 | $II_v$ | V. | 8 05 01 | ----- | 8 05 37 | 8 06 30 | 1.30 | 2.4 | 8 19 | V. C. 0.40 mm. SE of Luzon. |
| 188 | 19 | $I_d$ | V. | 8 25 09 | ----- | 8 25 43 | 8 25 45 | .03 | 2.4 | 8 30 | V C. 0.02 mm. |
| 189 | 19 | $I_d$ | V. | 10 06 03 | ----- | 10 06 47 | 10 07 13 | .15 | 2.4 | 10 11 | V. C. 0.03 mm. |
| 190 | 19 | $I_d$ | V. | 12 20 52 | ----- | 12 21 34 | 12 21 [illegible]6 | .03 | 2.4 | 12 23 | V. C. 0.01 mm. |
| 191 | 20 | $I_v$ | V. | 7 54 06 | ----- | 7 54 42 | 7 55 05 | .06 | 2.4 | 7 58 | V. C. 0.01 mm. SE of Luzon. |
| 192 | 20 | $I_d$ | V. | 13 57 20 | ----- | 13 57 44 | 13 57 47 | .03 | 2.4 | 13 59 |  |
| 193 | 20 | $I_d$ | V. | 16 34 41 | ----- | 16 35 22 | 16 36 07 | .04 | 2.4 | 16 38 | V. C. 0.02 mm. |
| 194 | 22 | $II_r$ | V. | 0 39 51 | 0 48 34 | ----- | 0 49 26 | .42 | 2.4 | 1 26 |  |
|  |  |  | H. NNW | 0 39 55 | 0 48 37 | ----- | 0 50 35 | .81 | 7.8 | 1 20 |  |
|  |  |  | H. WSW | 0 39 55 | 0 48 38 | ----- | 0 49 32 | 2.01 | 7.8 | 1 42 |  |
|  |  |  | W. N | 0 39 52 | 0 48 36 | ----- | 0 49 27 | .18 | 2.4 | 1 24 |  |
|  |  |  | W. E | 0 39 52 | 0 48 39 | ----- | 0 49 43 | .39 | 5 | 1 30 |  |
| 195 | 22 | $II_v$ | V. | 9 20 58 | ----- | 9 21 49 | 9 22 34 | .96 | 2.4 | 9 38 | V. C. 0.18 mm. SE of Luzon. |
| 196 | 22 | $I_v$ | V. | 12 09 18 | ----- | 12 10 18 | 12 10 25 | .08 | 2.4 | 12 14 | V. C. 0.01 mm. SE of Luzon. |
| 197 | 22 | $II_v$ | V. | 13 32 52 | ----- | 13 33 28 | 13 34 29 | 1.12 | 2.4 | 13 54 | V. C. 0.11 mm. SE of Luzon. |
| 198 | 22 | $I_v$ | V. | 14 12 28 | ----- | 14 13 07 | 14 13 18 | .04 | 2.4 | 14 18 | V. C. 0.01 mm. SE of Luzon. |
| 199 | 22 | $III_v$ | V. | 14 26 52 | ----- | 14 27 28 | 14 28 06 | 1.80 | 2.4 | ----- | V. C. 1.00 mm. SE of Luzon. |
| 200 | 22 | $II_v$ | V. | 14 36 10 | ----- | 14 37 00 | 14 37 32 | 1.60 | 2.4 | 15 28 | V. C. 0.28 mm. |
| 201 | 22 | $I_v$ | V. | 18 35 33 | ----- | 18 36 16 | 18 36 37 | .02 | 2.4 | 18 40 | Eqke., III at Aparri (NE of Luzon). |
| 202 | 22 | I | V. | 19 56 30 | ----- | 19 57 25 | 19 57 49 | .26 | 2.4 | 20 04 | V. C. 0.05 mm. |
| 203 | 23 | $I_v$ | V. | 4 23 30 | ----- | 4 23 58 | 4 24 39 | .06 | 2.4 | 4 27 | V. C. 0 02 mm. SE of Luzon, W Camarines. |
| 204 | 23 | $I_d$ | V. | 15 45 30 | ----- | 15 45 47 | 15 46 02 | .04 | 2.4 | 15 49 | V. C 0.01 mm. |
| 205 | 23 | $I_v$ | V. | 17 12 17 | ----- | 17 12 52 | 17 13 43 | .12 | 2.4 | 17 18 | V. C. 0.02 mm. SE of Luzon, W Camarines. |
| 206 | 24 | $I_d$ | V. | 3 17 50 | ----- | 3 18 05 | 3 18 07 | .07 | 1.2 | 3 21 | V. C. 0.05 mm. |
| 207 | 31 | $I_r$ | H. WSW | ----- | ----- | 2 55 53 | ----- | ----- | ----- | 3 16 |  |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8.1 seconds; WSW–ENE pendulum, T=8.7 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

4, 9$^h$ 15$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III. Este temblor es sin duda el registrado en Manila á 9$^h$ 16$^m$ 35$^s$ y en Batavia á 9$^h$ 18$^m$ 26$^s$, cuyo origen se hallaba hacia el NE del mar de Célebes.

12, 18$^h$ 10$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

13, 9$^h$ 10$^m$. **Ormoc** (W de Leyte). Temblor oscilatorio; dirección SE–NW, intensidad III.

13, 13$^h$ 57$^m$ 30$^s$.* **Isla de Mindoro.** Temblor de tierra de intensidad III, sentido en las estaciones de Calapan, que está el NE, y de San José, que está al SSW. Es probable que tuvo su epicentro dentro de la misma isla y que fué perceptible en toda ella y con mayor intensidad en la parte central y occidental.

15, 12$^h$ 3$^m$. **Romblón.** Temblor oscilatorio, precedido de ruido subterráneo (II Davison); dirección NE–SW, intensidad III, duración 3 segundos.

17, 6$^h$ 45$^m$ 22$^s$.* **Yap** (Carolinas occidentales). Temblor de tierra de intensidad V, duración 30 segundos. Registráronlo todos los seismógrafos del Extremo Oriente y de Europa. Su origen parece se hallaba al ENE de Yap, algo distante, cerca del meridiano 140° E y del paralelo 10° N. Fué sin duda de grande intensidad en el epicentro, á juzgar por la mucha amplitud y larga duración que tuvieron los movimientos registrados por los seismógrafos de Manila, Taihoku, y otros observatorios situados todos á más de 2,000 kilómetros de distancia.

17, 15$^h$ 35$^m$ 40$^s$.* **Islas Batanes y N de Luzón.** Temblor de intensidad IV en Santo Domingo (Batanes) y III en Laoag (Ilocos Norte) y Aparri (Cagayán). En Santo Domingo fué además acompañado de ruido subterráneo. Su origen se hallaba hacia el W del canal de Bashi. No parece haberse registrado más que en Manila y en Taihoku: por consiguiente no debió tener grande intensidad en el epicentro, aunque fué perceptible desde el N de Luzón hasta el S de Formosa; lo cual representa un área de 500 kilómetros de longitud en la dirección N–S.

19, 8$^h$ 5$^m$ 1$^s$.* **SE de Luzón.** Temblor de intensidad V–VI, perceptible en Catanduanes, toda la Provincia de Albay y parte oriental de Camarines. En Virac se observaron movimientos oscilatorios en dirección W–E, de intensidad V, con tres repeticiones ó aftershocks de intensidad II–III durante el día; en Legaspi (Albay), oscilaciones de dirección N–S; en Nueva Cáceres (Camarines) solamente se experimentaron movimientos de intensidad II, durante unos 5 segundos. Su epicentro se hallaba á unos 330 kilómetros hacia el NE del seno de Lagonoy, no lejos del meridiano 124° E y del paralelo 13.7° N. No parece haberse registrado fuera de Filipinas.

20, 7$^h$ 54$^m$ 6$^s$.* **SE de Luzón.** Temblor de tierra de intensidad IV, procedente del mismo origen que el del día 19.

21, 7$^h$ 30$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

22, 8$^h$ 10$^m$. **Nueva Cáceres** (Camarines). Temblor oscilatorio; dirección SW–NE, intensidad II–III, duración 4 segundos.

22, 9$^h$ 20$^m$ 58$^s$.* **SE de Luzón.** Temblor de intensidad III, procedente del mismo epicentro antes señalado, y sentido en Catanduanes y parte de las Provincias de Albay y Camarines. Á 12$^h$ 9$^m$ 18$^s$* hubo una repetición de intensidad III.

Á 13$^h$ 32$^m$ 52$^s$* ocurrió un segundo temblor de tierra de intensidad V en la misma región y procedente del mismo origen, al cual siguió una repetición de intensidad III á 14$^h$ 12$^m$ 28$^s$.*

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

Á $14^h$ $26^m$ $52^s$* tuvo lugar en las mismas provincias el temblor de tierra más intenso y de mayor extensión de toda la serie. Desarrolló intensidad VI–VII en Catanduanes, que dista unos 40 kilómetros del epicentro indicado antes, y IV–V en Albay y parte NE de Camarines. Ocurrieron después varias repeticiones de poca importancia, perceptibles solamente en Virac (Catanduanes). La nota de esta estación dice que durante este día se contaron hasta 13 distintos temblores, con cinco principales, que fueron los precedentes registrados todos en Manila. Fuera del Archipiélago solamente se registró el último en Formosa y en Batavia.

22, $18^h$ $35^m$ $33^s$. **Aparri** (NE de Luzón). Temblor oscilatorio; dirección NE–SW, intensidad III, duración 8 segundos.

23, $4^h$ $23^m$ $20^s$.* **Nueva Cáceres** (Camarines). Temblor de tierra de intensidad II–III, dirección E–W. Repitió con menos intensidad y la misma dirección á $17^h$ $12^m$ $17^s$.* El origen de estos dos temblores se hallaba sin duda en la parte occidental de Camarines á más de 70 kilómetros al W del epicentro de los temblores de tierra de los días 19, 20 y 22.

24, $9^h$ $5^m$. **Paracale** (NW de Camarines, Luzón). Temblor de tierra susultorio, de intensidad IV; acompañado de una detonación semejante á una descarga de artillería, procedente al parecer del SE. Duración 2 segundos escasos.

24, $11^h$ $42^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

NOTA.—Esta lista no contiene las repeticiones ó aftershocks experimentados en el valle del Agusan, publicados ya en el Boletín de Julio.

# BULLETIN FOR SEPTEMBER, 1911.

# METEOROLOGICAL BULLETIN FOR SEPTEMBER, 1911.

By Rev. JOSÉ CORONAS, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The mean atmospheric pressure of the month of September, 1911, was almost everywhere lower than the corresponding value for the preceding year, especially in northern Luzon. The highest pressures were generally observed on the 11th, the lowest on the 26th or 27th. As regards Manila, the monthly mean differed from that of September, 1910, by —0.28 millimeters, and from the normal for the month by —0.53 millimeters.

The monthly mean of temperature was slightly above that during the same month of the preceding year. For Manila, the extremes were 33.4° C. and 21.8° C., observed, respectively, on the 13th and 10th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR SEPTEMBER, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from Sept., 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from Sept., 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | *°C.* | *°C.* | *°C.* | | *°C.* | |
| Tagbilaran | 757.87 | ---------- | 759.06 | 1 | 755.76 | 26 | ---------- | ---------- | ---------- | ---------- | ---------- | ---------- |
| Cebu | 57.67 | +0.13 | 58.80 | 1 | 55.34 | 26 | 27 | +0.3 | 32.6 | 26 | 22 | 7 |
| Iloilo | 57.75 | — .07 | 59.02 | 11 | 55.33 | 27 | 26.4 | + .1 | 32.5 | 9 | 21 | 7 |
| Ormoc | 57.85 | + .14 | 59.11 | 11 | 55.28 | 26 | 26.5 | + .4 | 32.3 | 2 | 21.4 | 9 |
| Tacloban | 57.56 | ---------- | 58.90 | 11 | 54.47 | 26 | 27.5 | + .3 | 34.4 | 3, 5 | 23 | 24, 30 |
| Capiz | 57.55 | + .03 | 59.01 | 11 | 54.16 | 27 | 26.6 | — .3 | 34.7 | 5, 26, 27 | 22.3 | 14 |
| Calbayog | 57.45 | — .02 | 58.68 | 11 | 53.95 | 26 | 27.1 | + .2 | 34 | 1 | 21.9 | 7 |
| Legaspi | 57.10 | — .20 | 58.55 | 11 | 52.78 | 27 | 27.3 | + .5 | 34.9 | 13 | 21.1 | 25 |
| Atimonan | 56.77 | — .22 | 58.84 | 11 | 50.75 | 27 | 27.7 | + .6 | 35 | 26 | 22.1 | 3 |
| Paracale | 56.79 | ---------- | 59.18 | 11 | 50.18 | 27 | 27.5 | ---------- | 36 | 3 | 23.2 | 23 |
| Manila | 56.95 | — .28 | 59.26 | 11 | 50.39 | 27 | 26.9 | + .8 | 33.4 | 13 | 21.8 | 10 |
| San Isidro | 56.86 | — .06 | 59.32 | 11 | 49.39 | 27 | 26.7 | + .9 | 34.8 | 7 | 21.6 | 30 |
| Dagupan | 56.35 | — .43 | 58.86 | 11 | 48.11 | 27 | 27.1 | + .5 | 35.2 | 9 | 21.9 | 30 |
| Baguio[1] | 634.48 | — .34 | 637.10 | 11 | 625.05 | 27 | 17.9 | + .2 | 24.8 | 9 | 14 | 17 |
| Vigan | 755.50 | — .94 | 758.70 | 11 | 742.37 | 28 | 26.9 | + .3 | 32.8 | 11 | 21.4 | 15 |
| Tuguegarao | 55.40 | — .95 | 59.78 | 11 | 36.87 | 27 | [2]27.1 | — .4 | [2]36.4 | 3 | [3]21.5 | 14 |
| Aparri | 55.12 | —1.39 | 59.65 | 11 | 37.51 | 27 | 26.8 | — .3 | 34.5 | 3 | 22 | 28 |

[1] The barometric readings of this station are not reduced to sea level.
[2] 28 days of observation.
[3] 27 days of observation.

**Precipitation.**—Despite the frequency of atmospheric disturbances which occurred during the month, only the stations north of Manila report a total amount of rainfall in excess of that for September of last year; while at Manila and, generally speaking, all the stations situated south of the capital there was less rain than during the same month of 1910. In the rain gauges of the Central Observatory only 193.3 millimeters of water were collected during the entire month, which amount is 169.2 millimeters below the average for the month, and 305.8 millimeters below the rainfall during September of the preceding year.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF SEPTEMBER, 1911.

| Station. | Total. | Departure from Sept., 1910. | Rainy days. | Departure from Sept., 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from Sept., 1910. | Rainy days. | Departure from Sept., 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 43.6 | —193.2 | 6 | — 6 | 16.8 | 8 | Legaspi | 193.2 | — 60.3 | 17 | — 1 | 85.1 | 11 |
| Isabela, Basilan | 138.9 | —229.3 | 16 | —11 | 29.5 | 15 | Sumay, Guam | 443.9 | + 125 | 22 | — 3 | 167.6 | 15 |
| Zamboanga | 68.2 | — 78.4 | 9 | — 6 | 11.9 | 15 | Calapan | 185.2 | — 7.2 | 15 | — 5 | 42.6 | 28 |
| Davao | 254.8 | — 4.9 | 10 | — 4 | 123.7 | 21 | Virac | 158.4 | — 51.2 | 19 | + 2 | 34.8 | 23 |
| Cagayan, Misamis | 322.4 | ------- | 15 | ------ | 52.3 | 12 | Nueva Caceres | 134.1 | — 256.5 | 12 | — 9 | 24 | 24 |
| Butuan | 166.9 | — 19 | 13 | — 7 | 86.4 | 23 | Batangas | 260 | + 25.8 | 14 | — 9 | 34 | 28 |
| Dumaguete | 95.6 | — 96.2 | 12 | — 5 | 26.9 | 13 | Atimonan | 87.6 | — 131.3 | 16 | — 1 | 13.5 | 19 |
| Yap, W. Carolines | 260.8 | —118.9 | 29 | + 5 | 48.8 | 17 | Silang | 121.7 | — 552 | 13 | — 8 | 38.4 | 27 |
| Tagbilaran | 177.9 | + 48.2 | 10 | — 1 | 39.1 | 22 | Paracale | 225.1 | ------- | 16 | ------ | 62 | 11 |
| Surigao | 221.3 | — 11 | 13 | 0 | 56.9 | 12 | Manila | 193.3 | — 305.8 | 16 | —10 | 54.4 | 29 |
| Maasin | 366.5 | + 63.9 | 14 | 0 | 57.5 | 14 | Antipolo | 356.4? | — 46.2? | 19 | — 5 | 83.3 | 27 |
| Cebu | 139.8 | —172.8 | 14 | — 7 | 56.4 | 21 | Iba | 734.5 | — 98.8 | 23 | — 3 | 170.8 | 30 |
| Iloilo | 283.3 | —149.1 | 17 | — 9 | 56.6 | 28 | San Isidro | 353.7 | + 118.1 | 18 | — 8 | 123.2 | 30 |
| San Jose Buenavista | 300.2 | —458.7 | 27 | 0 | 65 | 28 | Tarlac | 282.5 | — 78.8 | 16 | — 5 | 54.1 | 29 |
| Cuyo | 493.1 | —151.7 | 21 | — 5 | 107.7 | 18 | Baler | 291.9 | ------- | 17 | ------ | 53.1 | 30 |
| Ormoc | 114.8 | —148.8 | 18 | — 1 | 35.3 | 22 | Dagupan | 549.5 | + 37.7 | 15 | —11 | 179.2 | 27 |
| Guiuan | 58.6 | ------- | 8 | ------ | 12.4 | 13 | Baguio | 1,703.2 | + 678.7 | 19 | — 8 | 799.8 | 27 |
| Tacloban | 138.4 | — 32.1 | 13 | — 4 | 27.4 | 6 | San Fernando, Union | 465.2 | + 77.5 | 12 | —10 | 131.8 | 28 |
| Capiz | 214.3 | —176.5 | 17 | — 6 | 39.4 | 29 | Echagüe | 131.1 | + 46.2 | 13 | — 3 | 39.7 | 26 |
| Borongan | 121.8 | —230.7 | 18 | — 1 | 24.4 | 21 | Vigan | 690.1 | + 18 | 14 | — 8 | 160 | 17 |
| Calbayog | 123 | —275.3 | 13 | —11 | 30.9 | 10 | Tuguegarao[1] | 520.2? | ------- | 11 | + 2 | 160.8? | 27 |
| Masbate | 106.5 | —203.5 | 12 | — 9 | 38.8 | 21 | Laoag | 1,302.6 | + 501.2 | 11 | — 9 | 545.1 | 17 |
| Romblon | 175.5 | ------- | 13 | ------ | 56.6 | 28 | Aparri | 461 | + 231.2 | 15 | — 2 | 261.1 | 16 |
| Laoang | 55.8 | ------- | 10 | ------ | 21.8 | 21 | Sto. Domingo, Batanes Is. | 245.9 | — 313.1 | 16 | — 6 | 102.8 | 27 |
| Gubat | 98.4 | ------- | 12 | ------ | 31 | 21 | | | | | | | |

[1] Between 2 and 6 a. m. of the 28th, the raingauge of this station was blown down by hurricane winds.

## DEPRESSIONS AND TYPHOONS.

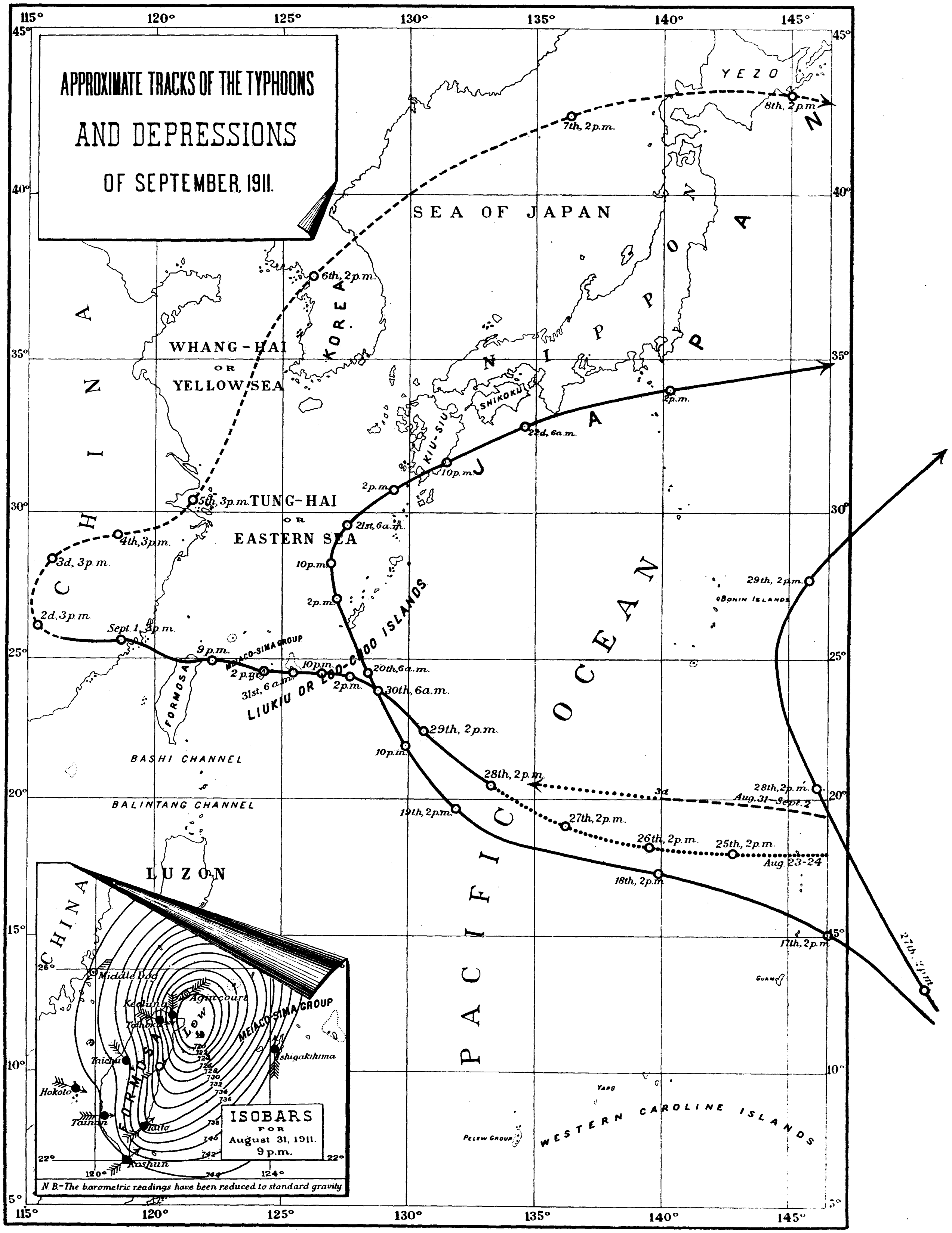
The remarkable period of atmospheric disturbances in the Far East which had begun during July of the present year, continued during the whole of September. Our weather maps showed no fewer than eight depressions or typhoons, whose approximate tracks the reader will find on Plates XII and XIII.

### THE TYPHOON OF NORTHERN FORMOSA, AUGUST 23 TO SEPTEMBER 8, 1911.

It would appear that this typhoon had been forming from August 23 to 24 in the vicinity of the northern islands of the Ladrone or Mariana group, and advanced with a strong westerly inclination until the 27th. At 2 p. m. of the 28th it could be located fairly well near 20.5° latitude north and 133° longitude east, moving toward NWbyW. During the early hours of the 30th the disturbance resumed a more westerly course which caused it to pass accross the Meiacosima group in the afternoon of the 31st and northern Formosa during the night of August 31 to September 1. In the afternoon of the latter day the typhoon had already entered the Continent, continuing to move westward until the afternoon of the 2d, when it began to recurve successively toward north, northeast, and east. In fact, on the 4th the storm was moving almost due east, having, however, already lost much of its intensity. On the 5th it assumed a north-northeasterly direction, traversing the Yellow Sea and Korea on the 6th; but on the 7th it inclined once more toward east while crossing the northern part of the Sea of Japan.

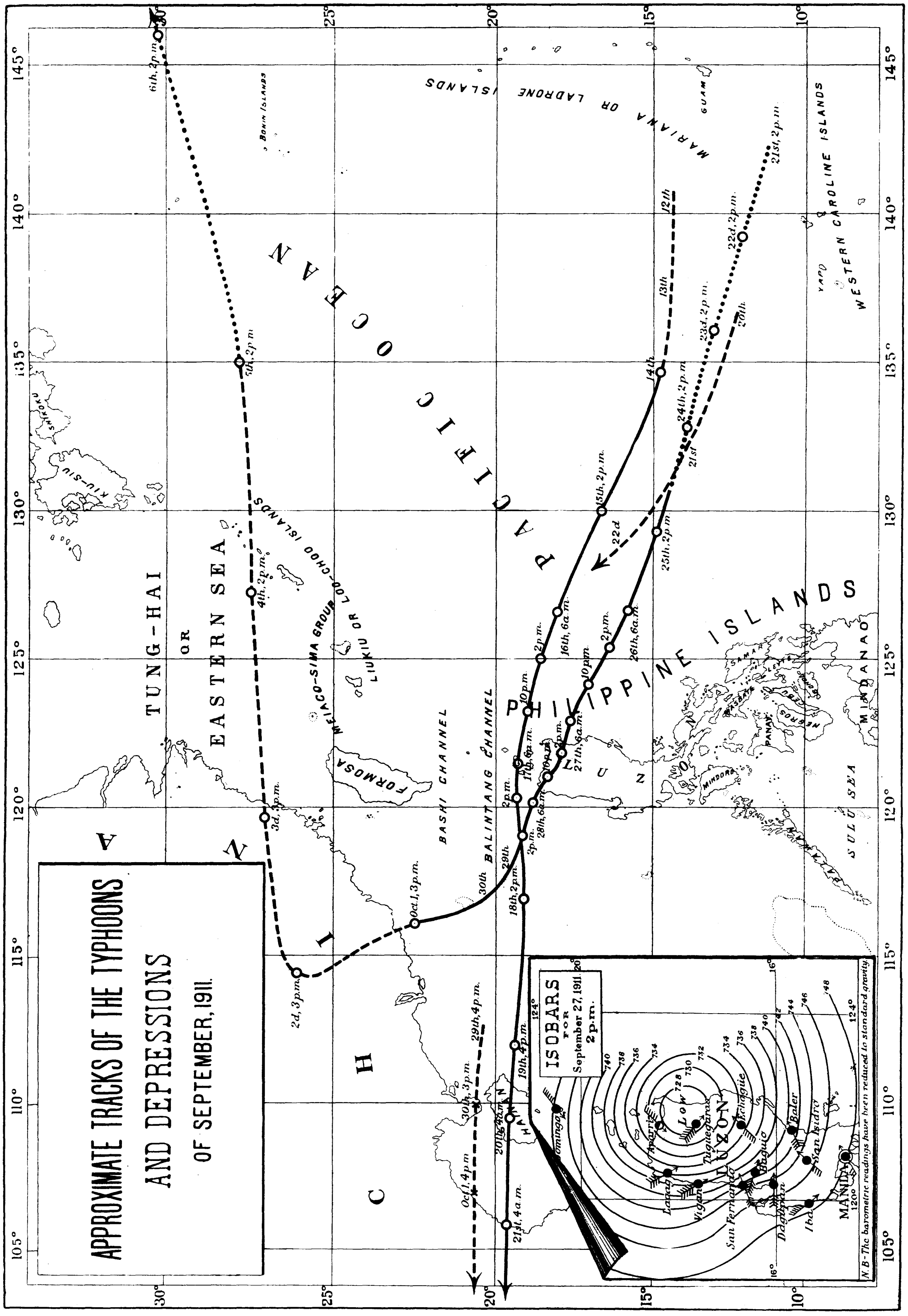
The valuable observations and illustrations which Mr. Kondo, director of Taihoku Observatory, placed at our disposal have been of great assistance to us in tracing the track of this typhoon accross the Meiacosima Islands and Formosa, and likewise the isobars for 9 a. m. of August 31, which we give on Plate XII.

*Plate XII.*



APPROXIMATE TRACKS OF THE TYPHOONS AND DEPRESSIONS OF SEPTEMBER, 1911.

Plate XIII


APPROXIMATE TRACKS OF THE TYPHOONS AND DEPRESSIONS OF SEPTEMBER, 1911.

### THE TYPHOON OF THE BABUYANES AND INDO-CHINA, SEPTEMBER 12 TO 21, 1911.

The observations of Guam and Yap indicate rather clearly that this typhoon originated on the 12th to the west of the southern Ladrone or Mariana Islands. After having moved very slowly toward west during about two days, it took a west-northwesterly direction until the afternoon of the 16th, when the track inclined again toward west. To this circumstance is due its crossing the Babuyanes Islands near the northern end of Luzon. The lowest barometer readings registered in the Philippines during the passage of this typhoon were 742.23 millimeters at Aparri and 744.85 millimeters at Santo Domingo, Batanes, both occurring during the earliest hours of the 17th. Closer to the vortex than the two stations mentioned was the steamer *Kumeric* in the evening of the 18th, when a barometric minimum of 732.8 millimeters was observed on board together with violent winds from north-northwest.

According to the observations made at Lamko light-house, Hainan Island, the typhoon crossed the said island on a due west course during the night of September 19 to 20; and the data and barograph curves kindly furnished to us by M. Cadet, director of Phulien Observatory, show that the vortex entered Indo-China during the early morning of the 21st, near Thanhoa, a short distance south of parallel 20° north.

### THE TYPHOON OF SEPTEMBER 16 TO 22, 1911.

This typhoon seems to have crossed the central portion of the Ladrone or Mariana group on the 17th. On the 18th and part of the 19th its track had a strong westerly inclination; but in the afternoon of the 19th it began to move toward north-northwest, and finally recurved to northeast during the early hours of the 21st, when the vortex was over the eastern portion of the Eastern Sea. During the night of the same day the storm crossed the southern end of Kiusiu Island, and then continued its course toward east-northeast near the southern coast of Japan.

### THE TYPHOON OF NORTHERN LUZON, SEPTEMBER 21 TO OCTOBER 6, 1911.

This typhoon was the most important during the month, as far as the Philippines are concerned; hence, we shall dwell upon it at greater length. It was probably formed on the 21st, approximately midway between the islands of Guam and Yap. From the beginning it advanced west-northwestward, but slowly, so that it had absolutely no effect on the Philippines until the morning of the 25th. In the afternoon of that day it became clear that the disturbance in question menaced the Archipelago; wherefore appropriate warnings were telegraphed to all our stations. The foreign meteorological centers in the Far East were likewise informed by means of the following cablegram:

September 25, 3.20 p. m.: Typhoon east of the northern Visayas or southeastern Luzon, moving west or west-northwest.

The storm continued on its west-northwesterly course, threatening the provinces of northern Luzon. The following notices were sent by Manila Observatory to its foreign correspondents during the next two days:

September 26, 8.15 a. m.: Typhoon east of Luzon, less than 300 miles distant, moving west-northwest.

September 27, 10.15 a. m.: Typhoon crossing northern Luzon, moving west-northwest.

September 27, 4.50 p. m.: Typhoon in about 121° longitude east and 17° latitude north, moving west-northwest.

We beg to say that at the time of the last of the foregoing dispatches the observatory was already cut off from communication with all the meteorological stations on Luzon situated north of Dagupan. Hence it is not surprising that the position then assigned to the vortex by it differs by one degree of latitude from that which was subsequently found, when, the observations of Aparri, Laoag, Tuguegarao, Vigan, and Echague having arrived, we were enabled to draw the weather map corresponding to the time. If the reader examines the isobars for 2 p. m. of the 27th which are shown on Plate XIII he will find that at the time mentioned the storm center was in about 18° latitude north, within Cagayan Province.

The lowest barometer readings recorded during this storm were 727.3 millimeters at Tuguegarao, between 2 and 3 p. m. of the 27th, and 727.97 millimeters at Aparri, at 4 p. m. of the same day. At the latter station the winds veered from north to east, while they backed from north to west at the former.

Just as the track of this typhoon was very similar to that of the typhoon of July 15 of the present year, so it likewise caused extraordinarily heavy rains at Baguio, Benguet, though they lasted for a much shorter time than on the former occasion. The total daily amount of rainfall for the 27th was 799.8 millimeters (31.49 inches). Unfortunately the "quadruple register" did not work satisfactorily during this typhoon, hence it is practically impossible for us to give more details on the maximum rainfall in an hour or in ten minutes as we did for the typhoon of July 15.

The storm entered the China Sea during the night of September 27 to 28, and continued on its west-northwesterly course during the 28th and part of the 29th. In the afternoon of the 29th it inclined considerably toward north, and penetrated into the Continent to the west of Swatow in the afternoon of October 1. Thenceforth it was difficult to recognize more than a depression which recurved toward east while within China, to the north of Hongkong, and crossed the Eastern Sea and the Loochoos Islands on the 4th, headed for the Pacific Ocean.

In addition to the cablegrams already mentioned, the following were sent by Manila Observatory:

September 28, 8.40 a. m.: Typhoon west of northern Luzon, less than 100 miles distant, moving west-northwest.

September 28, 5.10 p. m.: Typhoon in about 117° longitude east and 18° latitude north, moving west-northwest.

September 30, 3.15 p. m.: Typhoon over northeastern China Sea, moving north or north-northeast.

By Hongkong Observatory we were favored with the following notices relative to this typhoon:

September 26, 10 a. m.: Typhoon east of Luzon, moving west-northwest.
September 27, 10.05 a. m.: Typhoon in northern Luzon, moving west-northwest.
September 28, 11.35 a. m.: Typhoon northwest of Luzon, moving west-northwest.
September 29, 10.45 a. m.: Typhoon southeast of Hongkong, moving west-northwest.
September 30, 12.45 p. m.: Typhoon southeast of Hongkong, moving north.
October 1, 11 a. m.: Typhoon east-southeast of Hongkong, moving north.

Regarding the same typhoon, Zikawei Observatory dispatched the following advices to the stations on the China coast:

September 25, 4.30 p. m.: Typhoon southeast of Luzon, direction northwest.
September 26, 9.45 a. m.: Typhoon east of Luzon, direction northwest.
September 26, 9 p. m.: Typhoon northeast of Luzon, direction northwest.
September 27, 4.30 p. m.: Typhoon northwest of Luzon, direction northwest.
September 28, 9 a. m.: Typhoon, Balintang Channel, recurving.
September 28, 9 p. m.: Typhoon, Pratas south of Formosa Channel, direction northwest.
September 29, 11.30 a. m.: Typhoon southeast of Hongkong, beyond 120 miles, direction northwest.

## FOUR DEPRESSIONS OR TYPHOONS OF MINOR IMPORTANCE.

**The depression of August 31 to September 3, 1911.**—In tracing the track of this depression (Plate XIII) we supposed that the disturbance moved westward near parallel 20° north and between meridians 147° and 135° east. Its existence and direction were suggested by the observations of Guam and the Bonin Islands. In the absence of further data we can not claim for its track more than a fair degree of probability.

**The depression or typhoon of September 20 to 22, 1911.**—This disturbance was well indicated by the observations of Yap on the 20th and those made in the Philippines on the 21st and 22d. Originating, as it would appear, to the north or north-northwest of Yap, it must have moved toward northwest and filled up east of Luzon while still more than 300 miles distant. The barometers in the Philippines had fallen about 2 millimeters in the morning of the 22d, but they rose again on the 23d and 24th.

**The typhoon of September 27 to 30, 1911.**—This typhoon appears to be sufficiently vouched for by the observations of Guam on the 27th and 28th and those of the Bonins on the 28th to 30th. It appeared to the east-southeast of Guam in the morning of the 27th, moved toward north-northwest on the 27th and 28th, and recurved toward northeast in the morning of the 29th, when the vortex was southeast of the Bonin Islands.

**The depression or typhoon of September 29 to October 2, 1911.**—There seems to be no possibility of doubt that, while the typhoon of northern Luzon, mentioned before, was situated west of Balintang Channel and, moving very slowly, inclining toward north, there existed another depression in the northern part of the China Sea, to the southwest of Hongkong. This depression moved toward west and entered northern Indo-China, slightly above parallel 20° north, during the afternoon of October 1. We are unable to decide whether the typhoon of northern Luzon had split into two centers of low pressure, as has been suggested by Zikawei Observatory, or the second depression had formed in the China Sea itself, independently of the said typhoon.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La presión atmosférica media de este mes es en general inferior á la del año pasado, particularmente en el norte de Luzón. Las mayores presiones tuvieron lugar generalmente el día 11, y las menores el 26 ó 27. La media mensual de Manila difiere de la Septiembre, 1910, en —0.28 mm., y de la normal de este mes en —0.53 mm.

La temperatura media mensual es generalmente algo mayor que la de Septiembre del año pasado. Los valores extremos para Manila han sido 33.4 °C y 21.8 °C correspondientes á los días 13 y 10 respectivamente.

**Precipitación acuosa.**—Á pesar de no haber sido escaso este mes en perturbaciones atmosféricas, sin embargo, solamente las estaciones situadas al norte de Manila nos dan una cantidad total de lluvia mayor que la de Septiembre, 1910. En Manila, y generalmente en todas las estaciones al sur de Manila, la lluvia ha sido menor que la del año pasado. En los pluviómetros del Observatorio Central solamente se han recogido en todo el mes 193.3 mm., cantidad inferior á la normal de Septiembre en 169.2 mm., y á la suma total de Septiembre, 1910, en 305.8 mm.

## DEPRESIONES Y TIFONES.

El período de perturbaciones atmosféricas tan notable que empezó para el Extremo Oriente el pasado mes de Julio ha continuado todavía durante todo este mes de Septiembre. Ocho son las depresiones ó tifones que se han podido observar este mes en nuestros mapas del tiempo, y cuyas trayectorias aproximadas verán nuestros lectores en las láminas XII y XIII.

### EL TIFÓN DEL NORTE DE FORMOSA, AGOSTO 23 Á SEPTIEMBRE 8, 1911.

Este tifón parece se estaba formando del 23 al 24 de Agosto en los alrededores de la parte septentrional de las islas Ladrones ó Marianas. Probablemente se movió muy inclinado al oeste hasta el 27. El 28 á 2 p. m. se le puede situar con bastante aproximación cerca de 20.5° N y de 133° latitud E, moviéndose al NW$\frac{1}{4}$W. Desde las primeras horas del día 30 emprendió otra vez su marcha en dirección al W, viniendo así á atravesar el grupo de Meiacosima la tarde del 31 y el norte de Formosa la noche del 31 de Agosto al 1 de Septiembre. La tarde del día 1 se hallaba ya el tifón en el Continente y siguió moviéndose al W hasta la tarde del 2, en que empezó á recurvar al N, NE y E. Efectivamente, el día 4 se movía el tifón casi exactamente al E, aunque había perdido ya mucho en intensidad. El día 5 se dirigió al NNE; el 6 atravesó el Mar Amarillo y la Korea; el 7 se inclinó de nuevo al E. mientras cruzaba la parte norte del Mar del Japón.

Los valiosos datos é ilustraciones que Mr. Kondo, Director del Observatorio de Taihoku, se dignó poner á nuestra disposición nos han servido para dar con bastante precisión la trayectoria de este baguio á través de Meiacosima y de Formosa, así como también las isobaras de 9 p. m. del 31 de Agosto que incluímos en la lámina XII.

### EL BAGUIO DE LAS ISLAS BABUYANES É INDO-CHINA, 12 Á 21 DE SEPTIEMBRE, 1911.

Las observaciones de Guam y Yap indican con bastante probabilidad que se formó este baguio el día 12 hacia el W de la parte meridional de las islas Ladrones ó Marianas. Después de haberse movido unos dos días al W y con mucha lentitud, se dirigió al WNW hasta que la tarde del 16 inclinó de nuevo su trayectoria al W. Á esto se debió que pasase á través de las islas Babuyanes cerca del norte de Luzón. Las mínimas barométricas más bajas registradas en Filipinas durante el paso de este baguio fueron: 742.23 mm., estación de Aparri; y 744.85 mm., estación de Santo Domingo, islas Batanes. Ambas mínimas fueron observadas en las primeras horas del 17. Más cerca todavía del vórtice se halló el vapor *Kumeric* la noche del 18 en que se observó la mínima 732.8 mm. con vientos violentos de NNW.

Según las observaciones hechas en la estación del Faro Lamko, isla de Hainán, el tifón atravesó aquella isla moviéndose al W durante la noche del 19 al 20; y, según los preciosos datos y curvas barográficas que agradecemos á M. Cadet, Director del Observatorio de Phulien, el vórtice penetró en Indo-China en las primeras horas del día 21 cerca de Thanhoa, un poco al sur del paralelo 20°.

### EL TIFÓN DE 16 Á 22 DE SEPTIEMBRE, 1911.

Este tifón parece que atravesó el 17 la parte central de las islas Ladrones ó Marianas; movióse el 18 y parte del 19 muy inclinado al W; empezó á dirigirse al NNW la tarde del 19; y por fin recurvó al NE en las primeras horas del 21 cuando demoraba el vórtice en la parte oriental del Mar del Este. Durante la noche del mismo día 21 atravesó la extremidad meridional de la isla Kiusiu, continuando después su marcha al ENE cerca de la costa meridional del Japón.

### EL BAGUIO DEL NORTE DE LUZÓN, SEPTIEMBRE 21 Á OCTUBRE 6, 1911.

Fué éste para Filipinas el baguio más importante de todo el mes, y así nos extenderemos sobre él con alguna mayor extensión. Probablemente se formó el 21 entre Guam y Yap y casi á igual distancia de ambas estaciones. Se movió desde un principio al WNW y con poca velocidad, no influyendo absolutamente en Filipinas hasta la mañana del 25. Por la tarde de dicho día se vió evidentemente que se trataba de un tifón peligroso para el Archipiélago y se trasmitieron á todas las estaciones los avisos oportunos. También á los centros meteorológicos del Extremo Oriente se envió el siguiente cablegrama:

Día 25, 3.20 p. m.: Tifón al E de las Visayas Septentrionales ó de la parte sudeste de Luzón, moviéndose al W ó WNW.

El baguio fué siguiendo su curso al WNW amenazando las provincias de la parte septentrional de Luzón. Véanse á continuación los avisos de tifón trasmitidos por el Observatorio de Manila los días 26 y 27:

Día 26, 8.15 a. m.: Tifón al E de Luzón, distancia menor de 300 millas, moviéndose al WNW.

Día 27, 10.15 a. m.: Tifón cruzando la parte norte de Luzón, moviéndose al WNW.

Día 27, 4.50 p. m.: Tifón en los alrededores de 121° longitud E y 17° latitud N, moviéndose al WNW.

Hay que notar que al enviarse este último cablegrama se hallaba ya el Observatorio incomunicado con todas las estaciones de Luzón al norte de Dagupan. De ahí que no es de extrañar que la posición supuesta entonces por el Observatorio se diferenciase en un grado de la que nos dió el mapa del tiempo trazado más tarde con las observaciones que recibimos á su tiempo de Aparri, Laoag, Tuguegarao, Vigan y Echague. Efectivamente, examinen nuestros lectores las isobaras de 2 p. m. del 27 que incluímos en la lámina XIII y verán que el vórtice demoraba próximamente en el paralelo 18° N, dentro de la Provincia de Cagayán.

Las mínimas barométricas de este baguio fueron 727.3 mm. para Tuguegarao entre 2 y 3 p. m. del 27, y 727.97 mm. para Aparri á 4 p. m. del mismo día. Los vientos rolaron del N al E en Aparri, y del N al W en Tuguegarao.

Este baguio así como fué muy parecido en su trayectoria al de 15 de Julio último, así fué causa de lluvias muy extraordinarias en Baguio si bien la duración de éstas fué mucho menor en esta ocasión. El total de lluvia caída el 27 fué 799.8 mm. (31.49 pulgadas). Es de sentir que el "Quadruple Register" no funcionase satisfactoriamente durante este baguio. De ahí que nos sea prácticamente imposible dar más detalles sobre la máxima lluvia registrada en una hora ó en 10 minutos, como lo hicimos en el tifón de 15 de Julio.

El baguio entró en el Mar de China la noche del 27 al 28 y continuó moviéndose al WNW durante todo el 28 y parte del 29. La tarde del 29 se inclinó notablemente al

N, y penetró en el Continente por el W de Swatow la tarde del 1 de Octubre. Desde este día apenas se puede distinguir más que una depresión que recurvó al E cuando se hallaba en China hacia el norte de Hongkong, y el día 4 atravesó el Mar del Este y las islas Liukiu en dirección al Pacífico.

Además de los cablegramas copiados arriba, el Observatorio de Manila envió los siguientes los días 28 y 30:

Día 28, 8.40 a. m.: Tifón al W de la parte norte de Luzón, distancia menor de 100 millas, moviéndose al WNW.

Día 28, 5.10 p. m.: Tifón en los alrededores de 117° longitud E y 18° latitud N, moviéndose al WNW.

Día 30, 3.15 p. m.: Tifón en la parte NE del Mar de China, moviéndose al N ó NNE.

Del Observatorio de Hongkong fuímos favorecidos con estos avisos de tifón:

Día 26, 10 a. m.: Tifón al E de Luzón, moviéndose al WNW.
Día 27, 10.05 a. m.: Tifón en el N de Luzón, moviéndose al WNW.
Día 28, 11.35 a. m.: Tifón al NW de Luzón, moviéndose al WNW.
Día 29, 10.45 a. m.: Tifón al SE de Hongkong, moviéndose al WNW.
Día 30, 12.45 p. m.: Tifón al SE de Hongkong, moviéndose al N.
Octubre 1, 11 a. m.: Tifón al ESE de Hongkong, moviéndose al N.

El Observatorio de Zikawei trasmitió á las estaciones de la costa de China los siguientes telegramas referentes á este tifón:

Día 25, 4.30 p. m.: Tifón al SE de Luzón, dirección NW.
Día 26, 9.45 a. m.: Tifón al E de Luzón, dirección NW.
Día 26, 9 p. m.: Tifón al NE de Luzón, dirección NW.
Día 27, 4.30 p. m.: Tifón al NW de Luzón, dirección NW.
Día 28, 9 a. m.: Tifón en el canal de Balintang, recurvando.
Día 28, 9 p. m.: Tifón en Pratas, al S del Canal de Formosa, dirección NW.
Día 29, 11.30 a. m.: Tifón al SE de Hongkong, más de 120 millas, dirección NW.

### CUATRO DEPRESIONES Ó TIFONES DE MENOS IMPORTANCIA.

**Depresión de 31 de Agosto á 3 de Septiembre, 1911.**—Según suponemos en la lámina XII, esta depresión se movió hacia el W por los alrededores del paralelo 20° y desde el meridiano 147° hasta el meridiano 135°. Su existencia y dirección fué indicada ligeramente por las observaciones de Guam y de Bonín. Por falta de más datos no podemos dar á esta trayectoria más que un valor algo probable.

**Depresión ó tifón de 20 á 22 de Septiembre, 1911.**—Esta depresión ó tifón fué señalado con bastante claridad por las observaciones de Yap del día 20 y las de Filipinas del 21 y 22. Formado, según parece, hacia el N ó NNW de Yap hubo de moverse al NW y deshacerse al E de Luzón cuando se hallaba aún á una distancia algo mayor de 300 millas. Los barómetros de Filipinas que habían bajado unos 2 mm. la mañana del 22, volvieron á subir el 23 y 24.

**Tifón de 27 á 30 de Septiembre, 1911.**—Este tifón parece bastante indicado por las observaciones de Guam de los días 27 y 28 y las de Bonín de los días 28, 29 y 30. Apareció al ESE de Guam la mañana del 27; movióse al NNW durante el 27 y 28; y el 29 por la mañana recurvó al NE, cuando se hallaba el vórtice al SE de Bonín.

**Depresión ó tifón de 29 de Septiembre á 2 de Octubre, 1911.**—Parece no puede ponerse en duda que, mientras el tifón del norte de Luzón de que hemos hablado arriba se hallaba el 29 al W del canal de Balintang inclinándose al norte y moviéndose con mucha lentitud, existía otra depresión en la parte septentrional del Mar de China hacia el SW de Hongkong. Esta depresión se movió al W y penetró en el norte de Indochina un poco al norte del paralelo 20° la tarde del 1 de Octubre. Difícil es precisar si el baguio de Luzón se dividió en dos centros de depresión, como supone el Observatorio de Zikawei, ó si la depresión que acabamos de mencionar se formó independientemente de aquel en el mismo Mar de China.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 757.52 | 28 | 31.3 | 25.2 | 28 | 29 | 28.5 | 28.6 | 28.3 | 28.7 | 80.9 | 22.7 | 3.9 | 2.9 |
| 2 | 58.14 | 28.1 | 31.5 | 25.4 | 28.1 | 29.4 | 28.6 | 28.8 | 28.3 | 28.6 | 81.3 | 23 | 4.1 | 2.6 |
| 3 | 58.11 | 27.9 | 31.7 | 24.2 | 28.3 | 29.4 | 28.8 | 28.8 | 28.3 | 28.7 | 82.9 | 23 | 3.9 | 2.5 |
| 4 | 58.34 | 27.7 | 32.1 | 24.3 | 28.5 | 29.8 | 28.9 | 29 | 28.3 | 28.7 | 83.7 | 23.1 | 3.8 | 2.5 |
| 5 | 58.39 | 27.7 | 32.1 | 25 | 28.7 | 29.9 | 29 | 29.2 | 28.4 | 28.6 | 85.5 | 23.6 | 3.4 | 2.3 |
| 6 | 58.44 | 28 | 32.4 | 24.4 | 28.7 | 30 | 29.1 | 29.2 | 28.3 | 28.7 | 84.5 | 23.6 | 3.7 | 2.7 |
| 7 | 58.76 | 26.8 | 32.3 | 24.3 | 28.8 | 29.5 | 29.3 | 29.3 | 28.3 | 28.7 | 87.9 | 22.9 | 1.9 | 1.7 |
| 8 | 58 | 26.9 | 32.7 | 23 | 28.1 | 29.6 | 29 | 29.2 | 28.3 | 28.7 | 83 | 21.6 | 2.8 | 2.2 |
| 9 | 57.79 | 26.4 | 32.7 | 22.8 | 28.2 | 29.2 | 29 | 29.9 | 28.3 | 28.7 | 83.9 | 21.4 | 2.1 | 2 |
| 10 | 58.57 | 27 | 33.2 | 21.8 | 28 | 29.7 | 29 | 29.1 | 28.4 | 28.7 | 79.7 | 20.9 | 3.6 | 2.7 |
| 11 | 59.26 | 25.4 | 27.4 | 23.9 | 28.3 | 28.5 | 29 | 29 | 28.3 | 28.6 | 92.4 | 22.2 | .1 | .6 |
| 12 | 58.60 | 26.3 | 31.9 | 22.3 | 27.5 | 28.8 | 28.7 | 28.8 | 28.3 | 28.7 | 87.4 | 22.1 | 1.6 | 1.7 |
| 13 | 57.64 | 26.6 | 33.4 | 23.3 | 28.1 | 29.1 | 28.8 | 28.9 | 28.4 | 28.7 | 87.5 | 22.6 | 2.6 | 1.8 |
| 14 | 56.89 | 26.8 | 32.6 | 22.4 | 28 | 29.5 | 28.9 | 29 | 28.4 | 28.7 | 82.8 | 21.5 | 3 | 2.3 |
| 15 | 55.98 | 27.4 | 31.7 | 23.8 | 28.5 | 30 | 29 | 29.2 | 28.4 | 28.7 | 85.2 | 23 | 3.4 | 2.5 |
| 16 | 54.58 | 27.9 | 31.7 | 24 | 28.8 | 29.8 | 29 | 29.3 | 28.4 | 28.6 | 83 | 23.1 | 4.8 | 3.8 |
| 17 | 54.78 | 27.6 | 30.8 | 25.2 | 28.7 | 29.3 | 29.2 | 29.2 | 28.5 | 28.6 | 81.9 | 22.4 | 2.6 | 2.6 |
| 18 | 55.70 | 25.9 | 31.2 | 24.1 | 28 | 29.3 | 29 | 29 | 28.4 | 28.6 | 87.4 | 21.6 | .7 | 1.5 |
| 19 | 56.42 | 25.9 | 31.9 | 23.6 | 28 | 29.2 | 28.9 | 29 | 28.4 | 28.7 | 91.4 | 22.7 | .3 | 1.1 |
| 20 | 58.05 | 26.9 | 32.2 | 23.7 | 28 | 29.5 | 28.9 | 29 | 28.4 | 28.7 | 85.2 | 22.2 | 3 | 2.2 |
| 21 | 58.19 | 26.1 | 31.2 | 23.2 | 28.2 | 29.3 | 29 | 29 | 28.5 | 28.6 | 86.1 | 21.5 | 2.3 | 1.8 |
| 22 | 56.88 | 26.4 | 31.6 | 23.1 | 28 | 29 | 28.9 | 29 | 28.4 | 28.6 | 86.9 | 22.1 | 1.7 | 1.6 |
| 23 | 57.43 | 27.5 | 33.3 | 22.7 | 28.3 | 29.5 | 29 | 29.2 | 28.6 | 28.6 | 81.2 | 21.9 | 3.5 | 2.7 |
| 24 | 58.32 | 26.9 | 32.9 | 22.4 | 28.7 | 29.8 | 29.2 | 29.2 | 28.4 | 28.5 | 81.5 | 21.3 | 3.2 | 2.7 |
| 25 | 57.39 | 27.5 | 32.6 | 23 | 28.8 | 30 | 29.3 | 29.3 | 28.5 | 28.6 | 80.8 | 21.9 | 3.8 | 2.9 |
| 26 | 54.10 | 28 | 32.4 | 24.8 | 28.9 | 30.1 | 29.3 | 29.6 | 28.5 | 28.7 | 82.2 | 23 | 5.4 | 4.4 |
| 27 | 50.39 | 27.5 | 29.7 | 23.6 | 29 | 29 | 29.4 | 29.4 | 28.5 | 28.7 | 81.3 | 22.2 | 2.9 | 3.1 |
| 28 | 53.19 | 26.6 | 29.4 | 22.7 | 27.3 | 27.8 | 27.6 | 28 | 28.4 | 28.6 | 83.8 | 21.6 | .2 | 2.1 |
| 29 | 56 | 24.2 | 27 | 22.7 | 27 | 26.9 | 27.8 | 27.2 | 28.3 | 28.4 | 94 | 21.1 | .1 | .9 |
| 30 | 56.70 | 25.8 | 29.6 | 23.5 | 26.3 | 27.3 | 27.5 | 27.5 | 28.3 | 28.4 | 86.9 | 21.4 | 2.3 | 1.9 |
| Mean | 756.95 | 26.9 | 31.6 | 23.6 | 28.2 | 29.2 | 28.9 | 29 | 28.4 | 28.6 | 84.7 | 22.2 | 2.7 | 2.3 |
| Total | | | | | | | | | | | | | 80.7 | 68.3 |
| Departure from normal | −0.53 | 0 | +1.0 | 0 | | | | | | | —1.0 | —0.3 | | |

| Date. | Wind. | | | | Clouds. | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | |
| | | | | | | Upper. | Lower. | | | | |
| | | *Km.* | *Km.* | | *0–10.* | | | *h.* | *m.* | *mm.* | |
| 1 | SW | 743.5 | 42 | SW | 8.8 | Ci.-S. | Cu. WSW | 3 | 15 | 4.6 | ↙° a. ○ a. p. ● p. |
| 2 | WSW | 551 | 35 | WSW | 6.8 | Ci. | Cu. W | 8 | 15 | | |
| 3 | WSW | 385 | 32 | WSW | 4.7 | Ci. | Cu. WSW | 9 | 20 | | Ω a. |
| 4 | WSW | 336.5 | 31 | WbyS | 7.7 | Ci.-S. | Cu. WSW | 6 | 30 | | |
| 5 | WSW | 283 | 30 | WSW | 8.3 | Ci -S. | Cu. WSW | 3 | 45 | | |
| 6 | SW quad. | 283 | 28 | WSW | 6.2 | Ci. E | Cu. WbyS | 8 | 20 | | Ω a. |
| 7 | NW quad. | 160.5 | 15 | W | 6.2 | Ci.-S. | Cu. NE | 5 | 25 | .1 | ⌈↯° d° ↯° p. |
| 8 | Variable | 112 | 14 | W | 5.2 | A.-Cu. NE | Cu. E | 6 | 55 | | d° p° p. |
| 9 | Variable | 116 | 12.5 | W | 5.8 | Ci.-S. | Cu. E | 6 | 50 | 13 | ⌈↯° ● p. |
| 10 | W quad. | 123.5 | 12 | WSW | 4 | Ci. | Cu. E | 8 | 55 | .2 | Ω² a. p. p. |
| 11 | E | 63.5 | 8.5 | NNE | 10 | Ci.-S. | Cu.-N. E, ESE | 0 | 00 | 2.2 | d° a. |
| 12 | W quad. | 96 | 12 | W | 7.9 | Ci.-S. | Cu. ENE | 4 | 20 | 5.7 | ⌈↯° ● ↯ p. |
| 13 | W quad. | 74.5 | 10 | WSW | 5.1 | Ci.-S. | Cu. E | 6 | 40 | | d° ⌈↯ p. |
| 14 | SW quad. | 154.5 | 15.5 | WSW | 7.2 | Ci. ENE | Cu. NE quad. | 8 | 15 | 3.8 | ⌈↯ ● p. |
| 15 | W quad. | 262 | 25 | SW | 9.1 | Ci.-S. EbyN | Cu. W | 5 | 10 | | ○ a. p. ↯ p. |
| 16 | WSW | 410 | 36 | WbyS | 9.6 | Ci.-S. | Cu. W | 1 | 00 | | ○ a. p. |
| 17 | SW quad. | 630 | 37 | SWbyW | 9.8 | Ci.-S. NNE | Cu.-N. WSW | 0 | 00 | 1.4 | ● p. |
| 18 | S quad. | 174.5 | 15.5 | WSW | 9.6 | Ci.-S. SE | Cu.-N. SW | 2 | 05 | 3.3 | T° a. ● a. p. ⌈↯ p. |
| 19 | S quad. | 58.5 | 13 | S | 9.8 | Ci.-S. | Cu.-N. SSW | 3 | 05 | 17.1 | ● a. p. ⌈↯ p. |
| 20 | W quad. | 200.5 | 28 | SW | 6.3 | Ci.-S. | Cu. SW | 6 | 50 | | |
| 21 | W quad. | 115 | 15 | SW | 6.9 | Ci. ENE | Cu. SW | 5 | 45 | 18.5 | ● a. p. ⌈↯ p. |
| 22 | N | 75.5 | 9 | N | 8.9 | Ci.-S. | Cu. E | 3 | 55 | 2.9 | ● a. p. |
| 23 | E quad. | 105.5 | 13 | NW | 3.7 | Ci. | Cu. E quad. | 10 | 30 | | T p. |
| 24 | Variable | 91.5 | 12 | W | 5.8 | Ci.-S. | Cu. NE | 9 | 15 | | Ω a. ⌈↯ p. |
| 25 | W quad. | 218.5 | 19 | SW | 4.8 | Ci. SEbyE | Cu. NNW | 9 | 10 | | |
| 26 | WSW | 395 | 38 | WSW | 9 | Ci.-S. ENE | Cu. W, WSW | 2 | 35 | | ⌈↯ p. |
| 27 | W quad. | 978 | 55 | WSW | 10 | Ci.-S. | Cu.-N. W | 0 | 00 | 43.1 | T° a. ↙° ● T p. |
| 28 | SW quad. | 634 | 55 | WSW | 10 | Ci.-S. | Cu.-N. SW | 0 | 00 | 22.5 | ↙ ● a. d° p p. |
| 29 | S quad. | 346.5 | 27.5 | SW quad. | 10 | Ci.-S. | Fr.-N. SW | 0 | 00 | 54.4 | ● a. p. T ↯ p. |
| 30 | S quad. | 250.5 | 21.5 | SW | 10 | A.-S. | Fr.-N. SW | 0 | 00 | .5 | d ⌈↯ a. T° p° p. |
| Mean | | 280.9 | 23.9 | | 7.6 | | | 4 | 52 | | |
| Total | | | | | | | | 146 | 05 | 193.3 | |
| Departure from normal | | +12.6 | | | —0.1 | | | +7 | 39 | —169.2 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### TAGBILARAN.

[$\phi$=9° 38′ N; $\lambda$ = 123° 51′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity mean. | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. |  |  |
|  | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* |  | *0-12.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.06 | ------ | ------ | ------ | ------ | S quad. | 0.8 | 4.2 | Ci. | Fr.-N. SW | ------ |  |
| 2 | 58.59? | ------ | ------ | ------ | ------ | S | .8 | 3.2 | Ci. | Cu. W | ------ |  |
| 3 | 58.29? | ------ | ------ | ------ | ------ | W, S | .7 | 3.7 | Ci. | Cu. W | ------ |  |
| 4 | 58.70 | ------ | ------ | ------ | ------ | S, SW | .3 | 4.2 | Ci. | Cu. W | ------ | ⌒² p. |
| 5 | 58.72 | ------ | ------ | ------ | ------ | SW quad. | .8 | 5.3 | Ci.-S. | Cu. NW | ------ |  |
| 6 | 58.78 | ------ | ------ | ------ | ------ | SW | .7 | 5.5 | Ci. SE | Cu. W, WNW | 36.1 | ● ☈ p. |
| 7 | 58.88 | ------ | ------ | ------ | ------ | S, SSW | .3 | 8.5 | Ci.-S. | Cu. SW | ------ | ●² a. d° p. |
| 8 | 57.75 | ------ | ------ | ------ | ------ | SSW | .2 | 4.8 | Ci.-S., Ci. | Fr.-N. N, SE | ------ |  |
| 9 | 57.49 | ------ | ------ | ------ | ------ | SE, NNW | .3 | 4.3 | Ci. | Fr.-Cu. S quad. | 28.4 | ☈² d° p. |
| 10 | 58.43 | ------ | ------ | ------ | ------ | S | .5 | 7.7 | Ci. | Fr.-Cu. SSE, SSW | 4.1 | ●² a. d° ● p. |
| 11 | 58.94 | ------ | ------ | ------ | ------ | S | .3 | 5.5 | Ci.-S. | Cu. SW | 2 | ●° p. |
| 12 | 58.68 | ------ | ------ | ------ | ------ | SW quad. | .7 | 8.3 | Ci.-S. | Cu. S | ------ | d° a. p. |
| 13 | 57.76 | ------ | ------ | ------ | ------ | W | 1 | 5.7 | Ci.-S. | Fr.-Cu. NW | ------ | ☇° p. |
| 14 | 56.94 | ------ | ------ | ------ | ------ | S | 1.5 | 7 | Ci.-S. | Fr.-N. WSW, SW | 5.1 | ● a. |
| 15 | 56.65 | ------ | ------ | ------ | ------ | SW quad. | 1.5 | 6.5 | Ci.-S. | Cu. W | 4.7 | ☇ p. |
| 16 | 57.21 | ------ | ------ | ------ | ------ | SW | 2 | 10 | Ci.-S. | Fr.-N. SW | ------ | ● a. |
| 17 | 57.59 | ------ | ------ | ------ | ------ | S | 1.7 | 7 | Ci.-S. | Cu. SSW | ------ |  |
| 18 | 57.41 | ------ | ------ | ------ | ------ | S | .5 | 6 | Ci.-S. | Fr.-Cu. S | ------ |  |
| 19 | 57.83 | ------ | ------ | ------ | ------ | SW quad. | .7 | 8 | Ci.-S. | Cu. | ------ | ☇ p. |
| 20 | 58.54 | ------ | ------ | ------ | ------ | SSE, W | .3 | 4.5 | Ci.-S. | Cu. SSW | ------ |  |
| 21 | 58.02 | ------ | ------ | ------ | ------ | Variable | .8 | 8.3 | Ci.-S. | Cu. S | 29.2 | ●° ☈° p. |
| 22 | 57.32 | ------ | ------ | ------ | ------ | SW quad. | .5 | 9.5 | Ci.-S. | Fr.-N. W | 39.1 | ●² a. ● ☈° p. |
| 23 | 57.61 | ------ | ------ | ------ | ------ | SE quad. | .8 | 4.8 | Ci. | Fr.-Cu. W, SSW | 24.1 | ●² a. p. ☈° p. |
| 24 | 57.89 | ------ | ------ | ------ | ------ | Variable | .5 | 3.5 | Ci. | Cu.-N., Fr.-Cu. S | 5.1 | ● ☇° p. |
| 25 | 56.93 | ------ | ------ | ------ | ------ | S | .7 | 1.7 | Ci. | Cu. NW | ------ |  |
| 26 | 55.76 | ------ | ------ | ------ | ------ | S, W | 1.3 | 4.3 | Ci., Ci.-S. | Cu. NW | ------ |  |
| 27 | 56.07 | ------ | ------ | ------ | ------ | S | 2.5 | 5.2 | Ci.-S. | Fr.-Cu., Fr.-N. SW | ------ | ☇ p. |
| 28 | 57.40 | ------ | ------ | ------ | ------ | S | 2 | 5.7 | Ci.-S. | Cu. | ------ |  |
| 29 | 58.36 | ------ | ------ | ------ | ------ | S, W | .3 | 6.3 | Ci.-S. | Fr.-Cu. S | ------ |  |
| 30 | 58.50 | ------ | ------ | ------ | ------ | SSW, W | .3 | 5.2 | Ci., Ci.-S. | Fr.-Cu. SSW | ------ | ω° p. |
| Mean | 757.87 | ------ | ------ | ------ | ------ | ------------ | .8 | 5.8 | ------------------ | ------------------ | ------ |  |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------------ | ------------------ | 177.9 |  |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 758.80 | 27.9 | 31.5 | 24.4 | 72.8 | SW quad. | 9 | 1.3 | Ci.-S., Ci. | Cu. | ------ | ≡° Ω a. ☇ ☈ p. |
| 2 | 58.50 | 27.6 | 31.7 | 23.5 | 74.7 | S | 9.4 | 0 | Ci. | Cu. | ------ | Ω ≡° a. ☇° p. |
| 3 | 58.17 | 27.3 | 32.1 | 22.6 | 73.3 | S | 9 | 1 | Ci. | Cu. | ------ | Ω ≡° a. ☈° p. |
| 4 | 58.55 | 27.9 | 32.5 | 24.4 | 75 | Variable | 6.5 | 2.5 | Ci. | Cu. | 18.3 | Ω ≡° a. d ● ☈ p. |
| 5 | 58.54 | 27 | 31.7 | 24.1 | 80.3 | S quad. | 5.3 | 4.2 | Ci.-S. | Cu. | ------ | ◯ a. p. ☈ ☇° p. |
| 6 | 58.51 | 26.1 | 30.9 | 22.7 | 84 | S, SW | 5.1 | 6.5 | Ci.-S. | Cu. | 2.8 | d a. p. ● ☈ ☇ p. |
| 7 | 58.50 | 25.5 | 29.4 | 22 | 87.3 | S | 4.8 | 8.3 | Ci.-S. | Cu.-N., N. | 22.2 | ● a. ☈ a. p. ◯ p. |
| 8 | 57.58 | 26.6 | 30.9 | 22.8 | 79.3 | ENE, E | 5.7 | 5.7 | Ci.-S. | Cu. | ------ | ⊕ p. |
| 9 | 57.26 | 27.5 | 31.5 | 24 | 77.2 | NE, S | 5.9 | 2.2 | Ci. | Cu. | 1 | ω p. |
| 10 | 58.26 | 26.4 | 30.2 | 23.5 | 85.5 | SSE, SE | 5.1 | 5.3 | A.-Cu. SW | Cu.-N., Cu. | 1 | ●° d a. ☈ ☇° p. |
| 11 | 58.79 | 26.4 | 31 | 23.1 | 81.8 | Variable | 6.7 | 4.7 | Ci.-S. | Cu.-N. W | .5 | Ω ≡ a. d ●° p. |
| 12 | 58.50 | 26.7 | 30.5 | 23.3 | 81 | S quad. | 6.6 | 6 | A.-Cu., Ci.-S. | Variable | ------ | ☈ ☇ d² p. |
| 13 | 57.64 | 26.1 | 30.2 | 23.2 | 81 | SSW, WNW | 6.2 | 6.7 | Ci.-S. | Cu.-N. WbyS | ------ | ≡° a. d p. |
| 14 | 56.84 | 26 | 30.1 | 22.5 | 82.2 | SSW | 7.2 | 3.7 | Ci.-S. EbyN | Cu. W | 1.5 | Ω ≡° a. ☈ d² ●ᵓ p. |
| 15 | 56.33 | 27.6 | 30.5 | 24.9 | 77.3 | SSW | 11.8 | 5.8 | Ci.-S. | Cu. | 4.1 | ≡° ◯ a. d ☇ p. |
| 16 | 56.63 | 26 | 30 | 24.1 | 86.2 | SW quad. | --------- | 9.2 | Ci.-S. | Cu.-N. WSW | 11 | ● a. p. d° ☈ p. |
| 17 | 57.17 | 27.4 | 30.4 | 23.6 | 75.8 | SW quad. | --------- | 9.5 | Ci.-S. | Cu.-N., S.-Cu. | ------ | d a. ☇° p. |
| 18 | 57.33 | 27.2 | 30 | 24.3 | 77 | SSW | --------- | 8 | Ci.-S. | Cu. WSW | .8 | ≡° d² a. ☈ Ω p. |
| 19 | 57.60 | 26.6 | 30.6 | 23 | 81.3 | SW, SSW | --------- | 8 | Ci.-S. | Cu. S | ------ | Ω ≡° a. |
| 20 | 58.54 | 27.4 | 31.4 | 23.8 | 79.3 | SSW, WSW | --------- | 2.2 | Ci.-S. | S.-Cu., Cu. | ------ | Ω ≡° a. ☈ p. |
| 21 | 57.83 | 27.8 | 32 | 24.8 | 78.8 | SSE | 5.6 | 6.7 | Ci.-S. | Cu. | 56.4 | d° a. ☈ a. p. ⊤ d |
| 22 | 57.14 | 25.2 | 28.9 | 22.2 | 88.5 | Variable | 5.7 | 10 | Ci.-S. | N. SWbyS | 4.9 | d ●² a. ● ☈ p. |
| 23 | 57.55 | 26.8 | 31.2 | 23.2 | 81.2 | Variable | 6 | 6.5 | Variable | S.-Cu., Cu. | 3.3 | d² a. ● ☈ p. |
| 24 | 57.90 | 26.4 | 31.8 | 23.5 | 85.5 | Variable | 5.5 | 4.3 | Variable | N. W | 11.2 | d a. p. ● p. |
| 25 | 56.82 | 26.6 | 31 | 22.5 | 80.2 | Variable | 6.3 | 3.2 | Ci.-S. | Cu. NbyW, NW | .5 | ≡° a. d a. p. ☈ p. |
| 26 | 55.34 | 28 | 32.6 | 24.5 | 72.3 | SW quad. | 11.8 | 4.7 | Ci.-S. | Cu. WSW | ------ | ≡° a. |
| 27 | 55.46 | 28.5 | 30.9 | 26.7 | 71.2 | SSW | 16.9 | 6.8 | Ci.-S. | Cu. | ------ | ◯ a. |
| 28 | 57.08 | 27.9 | 30.6 | 26.2 | 74.8 | SW quad. | 12.6 | 6.2 | Ci.-S. | Cu.-N. SWbyS | .3 | d ● ☈ ω p. |
| 29 | 58.32 | 27.4 | 30.8 | 24.1 | 76.7 | SSW | 6.8 | 5.7 | Ci.-S. | Cu. | ------ | ◯° a. |
| 30 | 58.58 | 27.2 | 31.5 | 22.7 | 79.5 | SW quad. | 6 | 2.5 | Ci.-S. | Cu. | ------ | Ω a. ☇° ω° p. |
| Mean | 757.67 | 27 | 30.9 | 23.7 | 79.4 | ------------ | 7.5 | 5.2 | ------------------ | ------------------ | ------ |  |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | -------- | ------------------ | ------------------ | 139.8 |  |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.92 | 27.6 | 30 | 25.9 | 82.3 | SW | 19.1 | 4.2 | Ci. | Cu. SW | ------ | d a. |
| 2 | 58.61 | 27.3 | 30 | 25.4 | 80.8 | SW | 17.3 | 3.8 | Ci. E | Cu. | ------ | ↯ a. |
| 3 | 58.30 | 26.6 | 29.9 | 22.4 | 84.8 | SW | 14 | 3.3 | A.-Cu. NE | Cu. | ------ | ⌓ a. ↯ p. |
| 4 | 58.77 | 26 | 30.5 | 23 | 80.8 | SW | 10.3 | 5 | Ci. | Cu. | ------ | ⌓ a. ↯ a. p. ⊤ p. |
| 5 | 58.69 | 25.8 | 30.6 | 22.3 | 81.8 | NW quad. | 8.8 | 6.3 | Ci. | Cu. | ------ | ⌓ a. ⊤ d ↯ p. |
| 6 | 58.60 | 25.8 | 30 | 22.8 | 85.2 | NW, SW | 7.8 | 7.2 | Ci. E | Cu. | 0.3 | ⌓ ○ a. Γ↯ ψ ● p. |
| 7 | 58.60 | 25.6 | 31.2 | 21 | 87 | N quad. | 4.5 | 9.2 | Ci.-S. | Cu. | 33 | ⌓ a. Γ↯ ● ↯ p. |
| 8 | 57.78 | 25.8 | 31.3 | 22.8 | 82.7 | N, NE | 6.4 | 8 | Ci., Ci.-S. | Cu. | 2.8 | ⊤ ● ↯ p. |
| 9 | 57.36 | 26.6 | 32.5 | 23.2 | 82.7 | N | 6.1 | 8.3 | Ci. | Cu. NE | 2.8 | d ⊤ ● p. |
| 10 | 58.34 | 26.1 | 31.1 | 23.5 | 86.7 | N | 5 | 8.2 | Ci., Ci.-S. | Cu. | 3.6 | ● p. |
| 11 | 59.02 | 25.5 | 29.7 | 23 | 88.3 | NW, SW | 7.9 | 7.5 | A.-Cu. E | Cu. | 49.8 | ⌓ a. d a. p. ⊤ ●$^2$ p. |
| 12 | 58.58 | 26 | 29.3 | 23 | 85.2 | SW | 8.6 | 7.2 | Ci. | Cu. | ------ | d ⊤ ↯ p. |
| 13 | 57.78 | 25.6 | 29.8 | 23 | 86.8 | SW | 9.6 | 8.2 | A.-Cu. S | Cu. | 28.2 | ⌒ a. ↯ d a. p. ● p. |
| 14 | 56.98 | 26.3 | 29.7 | 22.6 | 81.3 | SW | --------- | 7 | Ci. | Cu. | ------ | ⊤ p. |
| 15 | 56.42 | 27.1 | 30.2 | 23.6 | 81.7 | SW | --------- | 7 | Ci. ENE | Cu. | ------ | ⌓ ○ a. ⊤ ↯ p. |
| 16 | 56.31 | 27.6 | 28.9 | 24.5 | 79.7 | SW | --------- | 8.3 | Ci.-S. | Cu. SW | 9.2 | ● ○ a. |
| 17 | 57.02 | 26.9 | 29.2 | 24.2 | 84.2 | SW | 20.4 | 9.8 | Ci.-S. | Variable | 28.7 | ● a. p. ↯ ⊤ p. |
| 18 | 57.26 | 26.3 | 27.3 | 23.7 | 85.5 | SW | 12.4 | 10 | Ci.-S. | Cu.-N. | 22.4 | Γ↯ ● a. p. |
| 19 | 57.60 | 26 | 28.6 | 23.1 | 86.2 | SW | 8.6 | 9.7 | Ci.-S. | Cu. | 6.9 | ● ↯ a. p. |
| 20 | 58.62 | 27 | 29.3 | 24.1 | 82.5 | SW | 7.7 | 6.7 | Ci., A.-Cu. | Cu. SW | ------ | ↯ p. |
| 21 | 57.82 | 27 | 30.5 | 24.6 | 84.3 | SW | 6.4 | 5.3 | Ci. | Cu. | .8 | ⌓ ≡ a. d ↯ p. |
| 22 | 57.09 | 26 | 29 | 24.4 | 89.2 | SW | 7 | 9.2 | Ci., Ci.-S. | Cu. SW | 2.8 | ● a. p. d a. |
| 23 | 57.72 | 26.2 | 29.3 | 24.1 | 84.7 | SW | 7.6 | 6.8 | Ci. | Cu. | .8 | ● ↯ p. |
| 24 | 58.19 | 26.2 | 30.1 | 23.6 | 83.5 | SW | 5.2 | 5.2 | Ci. | Cu. | ------ | ⊤ a. |
| 25 | 57.25 | 26.4 | 30.9 | 22.9 | 82.3 | S, SW | 5.4 | 4 | A.-Cu. NW | Cu. | ------ | ⌓ a. Γ↯ ↯ p. |
| 26 | 55.53 | 26.8 | 29.6 | 25.2 | 82.2 | SW | 16.6 | 6.8 | Ci., Ci.-S. | Cu. SW | 1.8 | ⌓ a. d ● p. |
| 27 | 55.33 | 28.2 | 30 | 24 | 78.8 | SW | 26.7 | 7.8 | Ci. | Cu. SW | 22.4 | ● a. p. |
| 28 | 57.23 | 25 | 27.1 | 22.7 | 88.2 | SW | 16.2 | 9.3 | Ci.-S. | N. | 56.6 | ● a. p. ⊤ a. Γ↯ p. |
| 29 | 58.26 | 26.6 | 29.7 | 23.5 | 82.5 | SW | 12.5 | 8.3 | Ci. | Cu. | 10.4 | ↯ ● a. p. |
| 30 | 58.50 | 27.2 | 30.3 | 24.9 | 85.2 | SW | 8.6 | 7.2 | Ci. | Cu. | ------ | |
| Mean | 757.75 | 26.4 | 29.9 | 23.6 | 83.9 | ------------ | 10.6 | 7.2 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------ | ------------ | 283.3 | |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.97 | 27.5 | 31.9 | 24.6 | 81.5 | SE quad. | 8.8 | 4.5 | Ci. | Cu. S | ------ | ↯ p. |
| 2 | 58.80 | 27.2 | 32.3 | 24.2 | 81.8 | S, E | 6.8 | 6.5 | A.-Cu. E | Cu.-N. S | ------ | ≡° a. ⊤ p. |
| 3 | 58.42 | 26.4 | 30.8 | 22.9 | 84.8 | N | 6.2 | 5 | Ci.-S., A.-Cu. E | Cu.-N. | ------ | Γ↯ ≡° ⌓ a. ⊤ ↯ p. |
| 4 | 58.66 | 26.1 | 30.3 | 23.2 | 86.3 | N, SE | 5.8 | 7.5 | A.-Cu. NE | Cu.-N. | 1.8 | ⌓° ≡° p a. ∞ ↯ p. |
| 5 | 58.72 | 25.5? | 30 | 23.2 | 92.2? | N quad. | 5.5 | 7.3 | A.-Cu. E | Cu.-N. WNW | 2.3 | ≡° Γ↯ a. d ⊤ ↯ p. |
| 6 | 58.79 | 24.7? | 29.2 | 22.1 | 92.3? | N | 3.7 | 8.5 | A.-Cu. NE | Cu.-N. W | 4 | ≡° a. ↯ a. p. d ⊤ |
| 7 | 58.68 | 24.7 | 29.2 | 21.9 | 91.8 | N | 5.6 | 7.7 | A.-Cu. E, NE | Cu.-N. | 8.6 | d ≡ a. ⊤ ↯ p p. |
| 8 | 57.90 | 25.8 | 30 | 22.6 | 88 | N, SW | 4.8 | 7.3 | A.-Cu. E | Cu. ENE | 11.2 | ≡° a. ⊤ ● ↯ p. |
| 9 | 57.52 | 26.1 | 30.8 | 21.4 | 85.3 | Variable | 5.2 | 6 | A.-Cu. | Cu. ENE | ------ | ≡° ● a. ⊤ ↯ p. |
| 10 | 58.27 | 25.2 | 31.6 | 22.1 | 90.5 | N, S | 7.1 | 5.2 | Ci.-S. | Cu. E, ENE | 2.4 | ≡° a. Γ↯ d ↯ p p. |
| 11 | 59.11 | 26.1 | 28.9 | 22.8 | 87.5 | Variable | 5.2 | 7 | Ci. | Cu.-N. E, ENE | ------ | ≡° a. d a. p. ⊤ ↯ |
| 12 | 58.74 | 25.6 | 31 | 22.8 | 89 | Variable | 5.3 | 8.5 | A.-Cu. E | Cu.-N. E, ENE | 3.3 | ≡ a. ⊤ ↯ p. |
| 13 | 57.91 | 26 | 29.4 | 22.7 | 87.5 | E quad. | 5.9 | 6.7 | A.-Cu. E | Cu.-N. WNW | 15.3 | ≡° a. ⌒ p ● ↯ p. |
| 14 | 56.90 | 25.8 | 29.3 | 22.1 | 87 | N, S | 5.7 | 6.7 | Ci.-S., Ci. | Cu.-N. W quad. | .3 | ∞$^2$ ≡° a. p a. p. ↯ |
| 15 | 56.44 | 26.6 | 31.9 | 23.1 | 85 | N | 6 | 8.7 | Ci.-S. E | Cu.-N W | 4.6 | ↯ ≡° p ○° ⊤ ● |
| 16 | 56.63 | 28 | 29.1 | 25.3 | 82.8 | SW quad. | 26.2 | 9.3 | A.-Cu. NW | Cu.-N. SW | 5.1 | d a. ● ↯ ↙° p. |
| 17 | 57.33 | 28.4 | 31.2 | 26.9 | 77.3 | S | 19.2 | 9 | Ci.-S. | Cu.-N. SW | ------ | ● ≡° a. ↯ a. p. |
| 18 | 57.40 | 27.6 | 30.8 | 24 | 81.8 | SE quad. | 9.9 | 9.5 | Ci.-S. | Cu.-N. S, SSW | 1 | ↯ a. p. ⊤ p p. |
| 19 | 57.72 | 26.9 | 31.1 | 23.2 | 82.5 | N, E | 6.4 | 7.5 | Ci.-S. | Cu.-N. SW | ------ | ≡° a. ↯ p. |
| 20 | 58.71 | 26.6 | 30.9 | 23.1 | 84.2 | NE, SSE | 5.6 | 8.5 | Ci.-S. | Cu.-N. SW | ------ | ≡ ⊤ a. ○$^2$ p. ↯ |
| 21 | 57.96 | 26.6 | 30 | 23.2 | 87.2 | Variable | 5.1 | 8.7 | Ci.-S. | Cu.-N. W | 8.1 | ≡° Γ↯ a. ⊤ ↯ ●° p. |
| 22 | 57.34 | 25.1 | 27.8 | 22.8 | 91.5 | S | 5 | 9.3 | A.-Cu. ENE | Cu.-N. W | 35.3 | ● ≡ Γ↯ d ⌒ ↯ |
| 23 | 57.72 | 25.3 | 30.7 | 22.6 | 89.5 | N, NE | 5.5 | 5.7 | Variable | Cu.-N. W | 2.3 | d ≡° a. p ⌒ p. |
| 24 | 58.10 | 26.3 | 30.7 | 22.4 | 83.3 | W, N | 5.4 | 5.5 | Ci.-S. | Cu.-N. NW | 1.1 | ≡° ⌒ p a. ↯ p. |
| 25 | 56.92 | 25.5 | 30.3 | 21.8 | 88.2 | N | 5.6 | 5.5 | Ci. E | Cu.-N. NW | 8.1 | ≡° Γ↯ ● a. ⊤ ↯ p. |
| 26 | 55.28 | 27.9 | 31.3 | 24.1 | 80.3 | SW quad. | 18.1 | 8.8 | Ci.-S. | Cu.-N. W quad. | ------ | ↯ p. |
| 27 | 55.70 | 29.1 | 31.3 | 27.9 | 76.7 | S | 28.1 | 8.5 | Ci.-S. | Cu.-N. SSW | ------ | ↯ p. |
| 28 | 57.39 | 28.8 | 31.7 | 26 | 76.7 | S quad. | 20.1 | 8.5 | Ci.-S. | Cu.-N. SSW | ------ | ≡° a. p ⊤ ↯ p. |
| 29 | 58.64 | 27.8 | 31.1 | 23.7 | 76.5 | S quad. | 9.7 | 8 | Ci.-S. NW | Cu.-N. | ------ | ○ a. ψ° ↯ p. |
| 30 | 58.88 | 26.5 | 31.5 | 22.1 | 83.5 | S | 5.8 | 8.3 | Ci.-S. NNW | Cu. | ------ | ≡ a. ψ ∞ p. |
| Mean | 757.85 | 26.5 | 30.5 | 23.4 | 85.1 | ------------ | 8.8 | 7.5 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ---------- | ---------- | ------------ | ------------ | 114.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi=11°\ 15'$ N; $\lambda=125°\ 00'$ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 758.43 | 28.2 | 33.7 | 23.2 | 80.2 | SE | 0.5 | 5.2 | Ci. ESE | Fr.-Cu. WSW | ------ | Ω$^{2}$ a. |
| 2 | 58.55 | 28.5 | 34 | 24.2 | 79.8 | SSE | .5 | 5.8 | Ci.-S. SE | Cu. WSW, SW | ------ | ϟ Ω$^{2}$○$^{2}$ a. ⌈ϟ Φ$^{2}$ p. |
| 3 | 58.12 | 28.2 | 34.4 | 23.5 | 81.2 | WNW | .5 | 4.5 | Ci.-S. | Cu. WNW | ------ | Ω$^{2}$ a. d p. |
| 4 | 58.34 | 28.6 | 34.3 | 24.3 | 78.5 | WNW | 1.2 | 5.7 | Ci.-S. E | Cu. NW by W, W | ------ | ϟ Ω$^{2}$ a. ○$^{2}$ a. p. |
| 5 | 58.28 | 27.9 | 34.4 | 24.2 | 83.2 | NW quad. | .8 | 7.3 | Ci.-S. E | Cu., Cu.-N. NW | 3.8 | Ω a. ● a. p. d ⊤ p. |
| 6 | 58.55 | 26.5 | 31.4 | 23.9 | 88 | WNW | .8 | 9 | A.-Cu., Ci.-S. | Cu.-N. NW | 27.4 | ⊤ ⌈ϟ$^{2}$ ●$^{2}$ ϟ p. |
| 7 | 58.56 | 26.2 | 32.5 | 23.3 | 87.8 | NW quad. | .7 | 7.5 | Ci.-S. | Cu.-N. N | ------ | Φ$^{0}$ a. d ϟ p. |
| 8 | 57.83 | 27.7 | 33.4 | 24 | 82.2 | Variable | .7 | 6.5 | Ci., Ci.-S. E, S | Cu. NE | ------ | Ω a. ⌣$^{2}$ p. |
| 9 | 57.62 | 27.2 | 32.6 | 24 | 84 | Variable | .3 | 3.5 | Ci.-S. | Cu. E | 3 | Ω$^{2}$ a. ⊤ p. |
| 10 | 58.43 | 27 | 34.2 | 23.2 | 86.3 | NW quad. | .5 | 3.3 | ------ | Cu. E | 21.1 | Ω$^{2}$ a. p. ●$^{2}$ ⌈ϟ p. |
| 11 | 58.90 | 26.8 | 33 | 23.2 | 86.5 | ESE | .0 | 6 | Ci. W | Cu.-N. E | 1.8 | Ω a. ● p. |
| 12 | 58.56 | 26.8 | 33.8 | 24.2 | 86.8 | NE quad. | .3 | 4.7 | Ci.-S. W | Cu. E | 1.5 | ○$^{2}$ ● d ⊤ p. |
| 13 | 57.55 | 26.9 | 32.7 | 24.3 | 87 | NW quad. | .3 | 7 | Ci. W, SW | Cu. NE | ------ | ⌣$^{2}$ a. d a. p. ϟ p. |
| 14 | 56.48 | 27.7 | 33 | 23.2 | 82 | NW quad. | .8 | 6.3 | Ci. SW | Cu. NNE, NNW | ------ | ⌣$^{2}$Φ$^{2}$Ω$^{0}$ a. ○$^{2}$ a. p. |
| 15 | 55.93 | 27.8 | 32 | 25.3 | 81.5 | NW quad. | 1.3 | 7.7 | Ci. | Cu.-N.NW quad. | 3.8 | ⌣$^{2}$ a. ○$^{2}$ a. p. ϟ ● p. |
| 16 | 56.10 | 27.1 | 32 | 24 | 85.3 | SW | .8 | 8.3 | Ci. | Cu.-N. WSW | 13 | ⌣$^{0}$ Φ$^{0}$ ⌒$^{2}$ ● ⊤ ϟ |
| 17 | 56.90 | 28.6 | 33 | 24.4 | 74.8 | SSW | 1 | 7.8 | Ci. E | Cu. SW | ------ | ϟ ○$^{2}$ a. p. |
| 18 | 57.22 | 27.8 | 32.2 | 24.7 | 81.7 | SW quad. | .3 | 7.7 | Ci. E | Cu.-N. SW | ------ | ϟ a. ⊤ p. |
| 19 | 57.46 | 27.6 | 33 | 24 | 85.2 | Variable | .5 | 7 | Ci.-Cu. E | Cu.-N., Cu. wsw, sw | ------ | ϟ ⊤ p. |
| 20 | 58.61 | 27.6 | 31.9 | 24.6 | 85 | SE quad. | .3 | 8.3 | Ci. E | Cu. SW | 1.3 | ○$^{0}$ a. p. |
| 21 | 58.04 | 26.1 | 30.9 | 24.6 | 92.2 | Variable | .7 | 9 | ------ | N. N, NW | 18.5 | ● ϟ a. p. d p. |
| 22 | 56.91 | 25.9 | 30.9 | 23.1 | 87.8 | NW, NE | 1.5 | 9.3 | ------ | Cu.-N. NNW | 20.8 | d a p. ϟ a. ● ⊤ p. |
| 23 | 57.54 | 26.6 | 32 | 23.1 | 85.2 | N quad | .5 | 6.2 | Ci. E | Cu. NW | 17.8 | ϟ a. p. ≡$^{0}$ a. ● p. |
| 24 | 57.82 | 26.9 | 31.5 | 23 | 86.2 | N quad | .7 | 5.3 | Ci.-S. E | Cu. NNE,N | .8 | ⌒$^{2}$ ●$^{0}$ a. ϟ p. |
| 25 | 56.48 | 27 | 31.6 | 24 | 83.7 | NW quad | 1.2 | 6.2 | Ci. E | Cu. N, NW | 3.8 | Ω$^{2}$ ● a. ϟ ○$^{2}$ p. |
| 26 | 54.47 | 28.9 | 33.5 | 26.2 | 72.4 | W quad. | 1.2 | 8.5 | Ci. NE | Cu. WNW, W | ------ | Ͼ$^{2}$ a. p. ϟ p. |
| 27 | 55.20 | 29 | 33 | 25.8 | 70.7 | S quad. | 1.3 | 6.8 | Ci. NE | Cu. SW | ------ | ○$^{2}$ a. p. ϟ p. |
| 28 | 56.95 | 28.6 | 33.6 | 25.5 | 73.2 | S | 1 | 7.7 | Ci. NE | Cu. SW | ------ | Ω$^{2}$ a. Ͼ$^{2}$ a. p. ϟ p. |
| 29 | 58.34 | 27.5 | 32.5 | 24 | 82.8 | Variable | .2 | 7.2 | Ci. NE | Cu. SW quad. | ------ | Ͼ$^{2}$ a. p. Ω$^{2}$ p. |
| 30 | 58.75 | 27.2 | 32.7 | 23 | 83.8 | W | .3 | 5.8 | Ci. NE, ENE | Cu., Cu.-N. WNW | ------ | ≡$^{0}$ ○$^{2}$ a. Ω$^{2}$ a. p. |
| Mean | 757.56 | 27.5 | 32.8 | 24.1 | 82.8 | ------ | .7 | 6.7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 138.4 | |

### CAPIZ.

[$\phi=11°\ 35'$ N; $\lambda=122°\ 45'$ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 758.51 | 26.9 | 34.6 | 23.3 | 83.5 | S | 1.3 | 5.2 | Ci. | N. SW | 30.7 | ● ⌈ϟ Φ p. |
| 2 | 58.68 | 26.7 | 33.8 | 22.5 | 80.3 | S quad. | 1.2 | 4.7 | Ci. | Cu. SW | ------ | Ω$^{0}$ a. ⊤$^{0}$ p. |
| 3 | 58.49 | 27 | 34 | 22.9 | 80.7 | S quad. | 1 | 4.5 | Ci. | Cu. SW | ------ | Ω a. ⊤ ϟ p. |
| 4 | 58.67 | 26.6 | 33.9 | 22.7 | 82.3 | Variable | .8 | 5 | Ci. | Cu. W | ------ | Ω$^{0}$ a. ⊤$^{0}$ ϟ$^{0}$ Φ p. |
| 5 | 58.43 | 26.5 | 34.7 | 22.5 | 83.5 | Variable | .8 | 7.2 | Ci.-S. | N. S,SW | ------ | |
| 6 | 58.51 | 26.8 | 33.5 | 23.4 | 84 | S | .8 | 8.2 | Ci.-S. | N. S,E | ------ | ⊤$^{0}$ ϟ$^{0}$ p. |
| 7 | 58.65 | 26 | 32.6 | 23.4 | 87.7 | S quad. | .8 | 8.5 | Ci.-S. | N. N | 32.8 | ⊤$^{0}$ a. p. ϟ. d$^{0}$⌣$^{2}$p. |
| 8 | 58.07 | 26.2 | 32 | 23 | 87.5 | Variable | 1 | 8 | Ci.-S. | Cu., N. NE | 13.2 | ● a. p. Φ p. |
| 9 | 57.66 | 26.9 | 32.9 | 23.7 | 85.7 | NE | 1 | 6 | Ci.-S. | Cu., N.-cf. NE | 6.8 | ● a. Φ p. |
| 10 | 58.63 | 26.5 | 32.5 | 24.1 | 89.8 | SW,N | 1 | 8.2 | Ci.-S. | N.-cf. NE | 13 | ● a. ϟ$^{0}$ Φ$^{0}$ p. |
| 11 | 59.01 | 27 | 33.2 | 23.9 | 86.7 | N quad. | .8 | 8.2 | Ci. NE,N | N. NE,SW | 1.3 | ●$^{0}$ a. p. ϟ ⊤$^{0}$ p. |
| 12 | 58.50 | 26.1 | 33.2 | 23.4 | 87.2 | SE, NW | .8 | 6.5 | Ci. | N.-cf. NE | ------ | ⌒$^{0}$ a. ⌈ϟ ϟ p. |
| 13 | 57.45 | 25.9 | 33.3 | 22.8 | 87.8 | S | 1 | 5.8 | Ci. | Cu. S | 4.1 | ⊕ ○ a. ● a. p. ϟ |
| 14 | 56.96 | 26.8 | 33 | 22.3 | 83.2 | NW quad. | 1 | 6.2 | Ci. NW,N | Cu. NW,N | ------ | |
| 15 | 56.28 | 27.2 | 33.8 | 23.4 | 83.8 | S | 1.2 | 7.2 | Ci.-S. | Cu. NW | ------ | Ω$^{0}$ a. ⌈ϟ ϟ p. |
| 16 | 55.95 | 26.6 | 33.8 | 23.8 | 87.5 | S quad. | 1 | 7.5 | Ci. | Cu., Fr.-N. SW.W | 4.1 | Φ ⊕ ○ a. ● ϟ p. |
| 17 | 56.65 | 27 | 32.8 | 24 | 84.2 | S quad. | 1 | 9 | Ci.-S. | N. SW | 3.1 | Φ$^{0}$ a. ●$^{0}$ a. p. ϟ p. |
| 18 | 57.18 | 25.4 | 29.7 | 24.1 | 92 | S | 1 | 10 | Ci.-S. | N. S | 1.6 | d a. ●$^{0}$ ϟ p. |
| 19 | 57.20 | 26.5 | 30.8 | 23.9 | 86 | SSE, S | 1.3 | 9.5 | Ci.-S. S | Fr.-N. S | ------ | d a. ϟ$^{0}$ p. |
| 20 | 58.44 | 26.2 | 33 | 24 | 90.7 | SSE | .2 | 7 | Ci.-S. | N. S | 19.6 | ⌈ϟ ⊤$^{0}$ ● p. |
| 21 | 57.82 | 27.2 | 33.5 | 24.2 | 86.7 | Variable | .7 | 8 | Ci. | Fr.-Cu., Cu.-N. S,SE | 35.6 | ⊤ d$^{0}$ ϟ ●$^{0}$ p. |
| 22 | 56.79 | 26.3 | 33.1 | 23 | 87.2 | NW | .8 | 8.2 | Ci.-S. | N. N,NW | .6 | ●$^{2}$ ⌈ϟ a. d ϟ p. |
| 23 | 57.78 | 26.3 | 32.2 | 23.7 | 87.5 | Variable | .7 | 6.3 | Ci.-S. | N. NW | ------ | ⊤$^{0}$ p. |
| 24 | 58.19 | 26.6 | 33.2 | 22.9 | 85 | SW, NNW | 1 | 6.2 | Ci. | Cu. NW | ------ | Ω$^{0}$ a. ϟ$^{0}$ p. |
| 25 | 57.14 | 27.8 | 33.3 | 24.6 | 82.5 | W | 1.3 | 4.5 | Ci. | Cu. NW | ------ | d$^{0}$ a. ϟ p. |
| 26 | 54.95 | 27.4 | 34.7 | 23.9 | 79.7 | SW | 1 | 9 | Ci. N | Cu., Fr.-N. W | ------ | d$^{0}$ p. |
| 27 | 54.16 | 28.2 | 34.7 | 25.2 | 74.5 | SSW | 1.3 | 7.8 | Ci.-S. | N. SW | .8 | ⊕$^{0}$ ○$^{0}$ a. ●$^{0}$ p. |
| 28 | 56.22 | 25.2 | 27.5 | 24.2 | 90 | S | 1.7 | 9.7 | Ci.-S. | N. S | 7.1 | ●$^{0}$ a.p. ϟ p. |
| 29 | 57.52 | 25.9 | 33.4 | 23.4 | 89.5 | S quad. | 1 | 8.3 | Ci.-S. | N. NW,SW | 39.4 | ⊕$^{0}$Ͼ$^{0}$ a. ● ⌈ϟ ϟ p. |
| 30 | 58.13 | 26.5 | 34.2 | 24 | 87.2 | S quad. | 1 | 7.8 | Ci.-S. | Cu., Fr.-N. SW | .5 | ●$^{0}$⊕$^{0}$○$^{0}$Φ$^{0}$⌣$^{0}$⌈ϟ$^{0}$ |
| Mean | 757.55 | 26.6 | 33 | 23.5 | 85.5 | ------ | 1 | 7.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 214.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 758.52 | 29.4 | 34 | 26.1 | 74.6 | SSW | 12.3 | 2 | Ci. | Cu. | ------ | Φ p. |
| 2 | 58.49 | 28.7 | 33.9 | 24.1 | 78.5 | SW | 8.4 | 3 | Ci.-S. | Cu. WSW | ------ | Φ p. |
| 3 | 58.20 | 27.4 | 33.4 | 23.6 | 83 | SW | 8.4 | 6.2 | Ci.-S. NE | Cu. WSW | ------ | ϟ a. p. Φ p. |
| 4 | 58.48 | 28 | 32.4 | 23.8 | 82.2 | SW | 7.8 | 7.7 | Ci.-S. | S.-Cu. W | 8.1 | ϟ ● a. ψ p. |
| 5 | 58.46 | 27.4 | 32.4 | 24.2 | 85.8 | SW | 6 | 7.3 | A.-Cu. E | S.-Cu. W | ------ | d a. Φ p. |
| 6 | 58.48 | 26.4 | 32.2 | 24.1 | 88.5 | W | 5.9 | 8 | A.-Cu. E | S -Cu. W | 24.4 | Γʓ T° d° p. |
| 7 | 58.58 | 25.8 | 31.4 | 21.9 | 88.5 | W, WNW | 5.4 | 6.8 | Ci.-S. | S.-Cu. NNW | 3.3 | ● ϟ a. p. |
| 8 | 57.70 | 26.4 | 32.2 | 22.2 | 85 | Variable | 6.4 | 3.2 | Ci. | Cu. NNE, NE | ------ | Ω a. d Φ ϟ p. |
| 9 | 57.65 | 25.6 | 31.1 | 22 | 87.5 | N | 6.4 | 3.3 | Variable | Cu. NE | ------ | Ω a. d ⌒ p. |
| 10 | 58.29 | 25.5 | 31.7 | 22.7 | 90 | N | 5.5 | 5.3 | Ci.-S. | N. NE | 30.9 | Ω a. ● T ψ ϟ p. |
| 11 | 58.68 | 26 | 32.2 | 22.2 | 87.3 | N | 6.3 | 4.8 | Ci. E | S.-Cu. SE | 1 | ψ a. T d° ϟ p. |
| 12 | 58.56 | 25.8 | 32.7 | 22.4 | 88.2 | N | 5.9 | 4.5 | Ci.-S. | Cu.-N. NE | 4.1 | Ω a. T Γʓ ●° ϟ p. |
| 13 | 57.58 | 25.8 | 31.9 | 22.4 | 89.3 | Variable | 6.1 | 6.3 | Ci.-S. | Cu. NW | 1 | T d° ϟ p. |
| 14 | 56.40 | 26.7 | 32.2 | 22.7 | 84.5 | W quad. | -------- | 8 | Ci.-S. NE | S.-Cu. WNW | ------ | ψ a. ϟ a. p. |
| 15 | 55.70 | 28 | 32.7 | 24.2 | 79.5 | W quad. | -------- | 8 | Ci.-S. | S.-Cu. WNW | ------ | ϟ² p. |
| 16 | 55.71 | 28.5 | 31.7 | 25.9 | 80.7 | SSW | 22.5 | 8.7 | Ci.-S. | S.-Cu., N SW | 4 | Γʓ d° p° ϟ p. |
| 17 | 56.69 | 28.4 | 31.4 | 26.7 | 78.8 | S | -------- | 9.2 | Ci.-S. | S.-Cu. SW | ------ | ϟ p. |
| 18 | 57.22 | 27.7 | 30.5 | 25.2 | 83.2 | SSW | 11.4 | 9.2 | A.-Cu. | S.-Cu. SW | 1.3 | d° T ϟ p. |
| 19 | 57.36 | 27 | 32.2 | 23.7 | 88.3 | Variable | 5.5 | 9 | A.-Cu. | S.-Cu. | ------ | ≡° a. ϟ p. |
| 20 | 58.44 | 27.7 | 32.2 | 24.3 | 83.3 | SSW | 5.4 | 7.8 | Ci.-S. | S.-Cu. SW, SSW | ------ | ϟ a. |
| 21 | 58.10 | 26.4 | 31.6 | 23.2 | 86.3 | N | 5.9 | 7.8 | A.-Cu. E | Cu WNW | 29.2 | T Γʓ ●² ϟ p. |
| 22 | 56.88 | 25.6 | 30.6 | 22.4 | 88.2 | Variable | 5.7 | 6.7 | Ci.-S. | S.-Cu. N | 8.1 | d a. ● T p. |
| 23 | 57.59 | 25.8 | 31.9 | 22.3 | 86.5 | Variable | 6 | 3.3 | Ci.-S. SW | Cu. NE | ------ | Ω a. |
| 24 | 57.90 | 25.1 | 31.7 | 22.5 | 91.7 | Variable | 4.7 | 4.2 | Ci.-S. | S.-Cu. NW | 7.1 | Ω a. ●° ϟ p. |
| 25 | 56.36 | 26.9 | 32.2 | 22.3 | 81.5 | W quad. | 8 | 5.2 | Ci.-S. NE | Cu. NW | ------ | Ω a. ϟ p. |
| 26 | 53.95 | 28 | 29.1 | 26.9 | 80.8 | SW | 25.1 | 9.5 | A.-Cu. | S.-Cu. W, SW | .5 | |
| 27 | 54.50 | 29.3 | 31.6 | 27.6 | 74 | S | 29.8 | 7.7 | Ci.-S. NW | S.-Cu. SSW | ------ | d° a. ϟ p. |
| 28 | 56.46 | 29 | 30.9 | 27.5 | 76.8 | S, SSW | 27 | 9.2 | Ci.-S. | S.-Cu. SSW | ------ | d ϟ p. |
| 29 | 58.03 | 28.2 | 31.6 | 24.1 | 77.2 | SSW | 12.4 | 8.7 | Ci.-S. | S.-Cu. | ------ | ψ p. |
| 30 | 58.49 | 27.4? | 31.6 | 23.5 | 83.3? | Variable | 5.7 | 7.8 | Ci.-S. N | S.-Cu. | ------ | ○ ψ p. |
| Mean | 757.45 | 27.1 | 31.9 | 23.9 | 83.8 | ------------ | 9.8 | 6.6 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 123 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 757.82 | 27.8 | 32 | 24.4 | 81.5 | SW | 14.7 | 2.5 | Ci. | Cu. SW | ------ | ϟ° p. |
| 2 | 58. | 28 | 32.6 | 24.1 | 81.3 | SW | 13.8 | 2 | Ci. | Cu. WSW | ------ | ψ° p. |
| 3 | 57.62 | 28 | 33 | 24.3 | 82 | SW | 11.9 | 3.2 | Ci. E | Cu. WSW | ------ | ψ p. |
| 4 | 58.08 | 27.8 | 33 | 24.2 | 82.3 | SW | 10.1 | 5.2 | Ci., Ci.-S. | Cu. WSW | ------ | ψ p. |
| 5 | 58.10 | 27.9 | 33.5 | 23.8 | 82.5 | SW quad. | 7.4 | 5.8 | Ci. | Cu. WSW | ------ | ϟ d° p. |
| 6 | 58.05 | 27.8 | 32.7 | 24.3 | 84.5 | WSW, SW | 4.5 | 5.5 | Ci. E | Cu. WSW | ------ | ○ T ϟ p. |
| 7 | 58.39 | 27.5 | 32.3 | 22.9 | 83.8 | ENE | 3.6 | 6.3 | Ci.-S. E, ESE | Cu.-N. NE | 8.4 | Γʓ ● a. ϟ p. |
| 8 | 57.87 | 27.9 | 33.5 | 22.1 | 80 | NE, E | 6.9 | 2.3 | Ci. | Cu. ENE | 1.3 | d° p° a. |
| 9 | 57.82 | 27.3 | 34 | 23.5 | 86.2 | NE, ENE | 7 | 6.8 | Ci.-S. | Cu. ENE, E | 9.9 | ●° a. p. |
| 10 | 58.35 | 28.4 | 33.5 | 24.1 | 79 | NNE, NE | 9 | 3.7 | Ci.-S. | Cu. E | ------ | ● a. ψ p. |
| 11 | 58.55 | 27.4 | 33.6 | 23.2 | 85.2 | Variable | 5.4 | 5.3 | Ci. E | Cu. E, W | 85.1 | ϟ p° p. |
| 12 | 58.39 | 27 9 | 34.2 | 23.1 | 83.8 | ENE | 5.1 | 3.2 | Ci.-S. | Cu. E | .5 | ●² a. d° ϟ° p. |
| 13 | 57.66 | 27.7 | 34.9 | 23.2 | 82.7 | NE | 5.5 | 2 | Ci. SSE | Cu. E | ------ | ϟ p. |
| 14 | 56.55 | 25.6 | 32.4 | 21.4 | 88.3 | NNE | 4 | 5.5 | Ci.-S. E | Cu. NW, NNW | .5 | ●° p. |
| 15 | 55.41 | 26.8 | 31.8 | 23 | 82.3 | W quad. | -------- | 8 | Ci.-S. E | Cu. NW, WNW | ------ | ϟ p° p. |
| 16 | 54.72 | 27.8 | 30.6 | 24.4 | 83 | SW | 16.1 | 7.8 | Ci.-S. NE | Fr.-Cu. WSW | 1 | ● a. ϟ p. |
| 17 | 55.83 | 27.6 | 30.4 | 24.2 | 80.8 | SW | 14.8 | 9 | Ci.-S. | Cu.-N. SW | 3.8 | ● a. |
| 18 | 56.74 | 26.3 | 30.1 | 23.7 | 89 | SW | 7.6 | 9.8 | Ci.-S. | Cu. SW | 4.3 | ● a. p. |
| 19 | 57.12 | 26.9 | 29.7 | 23.4 | 86.5 | SSW | 6.9 | 10 | Ci.-S. | Cu. WSW | .5 | ϟ p. d° a. p. |
| 20 | 58.21 | 27.5 | 33 | 23.4 | 81.7 | SW | 8.1 | 7.2 | Ci.-S. | Cu. WSW | ------ | ϟ p. |
| 21 | 57.98 | 26.3 | 33.3 | 22.1 | 87 | SW | 5.6 | 7 | Variable | Cu. W, WSW | 71.1 | ⊕ a. ●² p. |
| 22 | 56.81 | 26.9 | 33.2 | 22 | 85.8 | NNE, NE | 3.6 | 5.8 | Ci.-S. | Cu. E | ------ | ϟ p. |
| 23 | 57.58 | 27.4 | 34 | 22 | 81.7 | NE | 4.5 | 2.7 | Ci.-S. SW | Cu. E | ------ | ≡ a. |
| 24 | 57.92 | 25.9 | 32.7 | 22.2 | 87.2 | ENE, W | 4.2 | 3.3 | Ci.-S. | Cu.-N.,N. WSW,N | .8 | d² a. |
| 25 | 56.36 | 27.3 | 33.1 | 21.1 | 79.7 | Variable | 6.9 | 5.5 | Ci. | Cu. NNW, WNW | .8 | ○ ϟ p. |
| 26 | 52.99 | 27.6 | 31.1 | 24 | 82.7 | SW | 18.1 | 9.8 | Ci.-S. | N., Fr.-N. WSW | 2.6 | ● a. |
| 27 | 52.78 | 28.1 | 30.9 | 25.4 | 76.5 | SW | 22.9 | 9.8 | Ci.-S. | Cu. WSW | .8 | ● a. ϟ p. |
| 28 | 55.65 | 27.2 | 29.1 | 25.1 | 81.8 | S | 13.5 | 10 | Ci.-S. | Cu., Fr.-N. SW | 1.8 | ϟ p. |
| 29 | 57.46 | 26.7 | 31.4 | 23.9 | 84.8 | SW | 9.6 | 7 | Ci.-S. | N. WSW | ------ | ● a. ϟ p. |
| 30 | 58.14 | 26.8 | 31.6 | 23 | 85.3 | SW quad. | 7 | 6 | Ci.-S. | Cu. SSW | ------ | ψ p. |
| Mean | 757.10 | 27.3 | 32.4 | 23.4 | 83.3 | ------------ | 8.9 | 5.9 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 193.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 757.07 | 29.1 | 34 | 25.8 | 67.8 | SW | 14.1 | 8.2 | Ci. | S., Cu. SW | ------ | ○$^2$ a. Φ° p. |
| 2 | 57.50 | 29 | 34 | 24.2 | 67 | SW, WSW | 11.1 | 4.7 | Ci. NE | Cu. WSW, W | ------ | Φ° Φ$^2$ p. |
| 3 | 57.24 | 28.1 | 34.4 | 22.1 | 73 | SW | 11.6 | 4 | Ci. E | Cu. W | ------ | Φ° Φ$^2$ p. |
| 4 | 57.78 | 28.2 | 34.3 | 23.4 | 75.7 | SW | 9.6 | 7.5 | Ci. E | Cu., S.-Cu. W | ------ | ○° a. d° ↯Φ°ψ°p. |
| 5 | 57.83 | 27.8 | 34.6 | 22.9 | 78.7 | SW | 8 | 9.2 | A.-Cu. E | S.-Cu. W | ------ | ⛈° Φ° ψ° p. |
| 6 | 57.92 | 28 | 34 | 22.5 | 78.7 | SW | 8.4 | 6.5 | Ci. E | Cu., S.-Cu. W, NW | ------ | ○$^2$ a. d° d Φ°ψ$^2$p. |
| 7 | 58.48 | 27.6 | 31.4 | 22.6 | 80.7 | Variable | 14.1 | 5.2 | Ci. E | Cu.-N. NE, E | 1.3 | ⛈° ↯° Φ$^2$ p. |
| 8 | 57.96 | 28.3 | 31.4 | 25.2 | 75.3 | NE | 15.6 | 8.2 | A.-Cu. ENE | S.-Cu. NE | 3.1 | ●° d°a. p. ↯°Φ°p. |
| 9 | 57.93 | 28.2 | 32 | 24.9 | 78.2 | NE | 14.8 | 7 | Ci. E | S.-Cu. NE quad. | 1 | ○°d°a.⛈°●°pΦ° |
| 10 | 58.76 | 28.8 | 32 | 25.4 | 75.5 | NE | --------- | 5 | Ci. NE | S.-Cu. NE | ------ | Φ° d° a. d$^2$ p. |
| 11 | 58.84 | 26.8 | 27.4 | 24 | 87.8 | N | 19.6 | 9.3 | Ci.-S. | S.-Cu. NE | 11 | ⛈° a.●°a.p.ψ$^2$p. |
| 12 | 58.49 | 27.1 | 29.7 | 24 | 85 | N quad. | 14 | 6.8 | Ci. E | S.-Cu. NE | 3.6 | ψ$^2$d°a⛈°●°Φ°p. |
| 13 | 57.76 | 26.9 | 29.9 | 22.9 | 86 | NE, NW | 13.7 | 4 | Ci. ENE, E | Cu. NE | 7.6 | ↯ Φ° p. |
| 14 | 56.72 | 27.2 | 29.9 | 23.5 | 82 | Variable | 12.5 | 8.5 | Ci. ESE | Cu. NE | ------ | Φ°● a.○$^2$a.p.↯p. |
| 15 | 55.53 | 27.4 | 33.6 | 22.7 | 81.2 | SW | 9.2 | 9.5 | Ci. NE, ENE | Cu. NW | ------ | ○$^2$ a. p. |
| 16 | 54.02 | 28.4 | 32.5 | 24.2 | 72.4 | SW quad. | 18.7 | 8.8 | A.-Cu. NE, EbyN | S.-Cu. W | ------ | ○° a. ↯° p. |
| 17 | 54.82 | 28.4 | 32.5 | 24.4 | 75 | SW | 16.3 | 9.5 | Ci.-S. | S.-Cu. SW | 3.6 | ○° a. d$^2$ ●° ↯° p. |
| 18 | 55.71 | 26.6 | 29.2 | 23.6 | 83.7 | SW quad. | --------- | 10 | A.-Cu. SE | S.-Cu. SW | 8 | ●° a. p. d$^2$ a. d p. |
| 19 | 56.40 | 27.4 | 30.4 | 24.4 | 80.2 | S | 9.6 | 8.7 | Ci. | S.-Cu. S | 13.5 | d$^2$ a. d° ●° ↯$^2$ p. |
| 20 | 57.78 | 27.5 | 33.1 | 23.2 | 82.3 | S, SW | 7.1 | 9.3 | A.-Cu. W | S.-Cu. SW | ------ | d° ≡ ○° a. ⛈ p. |
| 21 | 57.77 | 26.7 | 31.7 | 23.1 | 83.3 | SW | 10 | 7 | Ci. E | Cu. NW | 12.7 | ○° a. d° ↯° ●° p. |
| 22 | 56.72 | 27 | 30.2 | 22.4 | 83.3 | N | 11 | 8.3 | Ci.-Cu. NE | S.-Cu. Variable | .3 | ●° a. d$^2$ ↯ p. |
| 23 | 57.49 | 28.1 | 32.7 | 22.7 | 78.8 | NE quad. | 10.2 | 5.2 | Ci. | Cu. SE | 5.1 | ≡° a. ↯ ●° p. |
| 24 | 58.24 | 27.3 | 31.2 | 22.5 | 82.2 | N quad. | 12.7 | 4.7 | Ci.-S. SE | Cu. NW, N | ------ | ●° a. ○° a. p. ↯°p. |
| 25 | 57.10 | 27.6 | 30.7 | 22.4 | 76.2 | Variable | 13.6 | 5.5 | Ci. NE | S.-Cu. NNE | ------ | ↯° p. |
| 26 | 53.07 | 28.4 | 35 | 22.8 | 73.5 | SW | 15.9 | 9 | Ci.-S. ENE | S.-Cu. W, NW | ------ | ○° a. d$^2$ ↯ p. |
| 27 | 50.75 | 27.7 | 29.5 | 25.3 | 78.2 | SW | 30.5 | 10 | Ci.-S. | S.-Cu. SW | .5 | ↙° d° a. p. ↯ p. |
| 28 | 53.87 | 27.2 | 29.5 | 23.6 | 77.3 | SSW, SW | 18.5 | 10 | Ci.-S. | S.-Cu. S | 12 | d$^2$ d° ●° p. |
| 29 | 56.57 | 25.3 | 28 | 22.7 | 85 | SW quad. | 10.1 | 10 | Ci.-S. | N. S, SW | 4.3 | ● a. ●° p. |
| 30 | 56.84 | 28.4 | 31.8 | 25 | 73 | SW quad. | --------- | 9.7 | Ci.-S. | Variable SW | ------ | ○° a. ↯° p. |
| Mean | 756.77 | 27.7 | 31.7 | 23.6 | 78.6 | ------------ | 13.4 | 7.6 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 87.6 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 757.14 | 28.7 | 34.3 | 25.3 | 78.3 | SW | 11.1 | 7.3 | Ci.-S. | Cu. SW | ------ | |
| 2 | 57.62 | 29 | 35.8 | 24.5 | 77.7 | SW | 9.3 | 2.3 | Ci. | Cu. SW | ------ | Ω a. ψ p. |
| 3 | 57.13 | 28.9 | 36 | 25 | 75.8 | SW | 11.9 | 4.8 | Ci. | Cu. SW | ------ | ⊤ Φ° p. |
| 4 | 57.67 | 28.9 | 35.3 | 24.4 | 78.2 | SW | 8.2 | 7.3 | Ci. NE | Cu. SW | ------ | Ω° a. ψ p. |
| 5 | 57.84 | 28.7 | 35.3 | 24.9 | 78 | SW quad. | 7.9 | 7.7 | A.-Cu. E | Cu. SW, WSW | ------ | ○° a. p. Φ p. |
| 6 | 57.97 | 28.1 | 33.8 | 24.3 | 81.5 | SSW, NW | 5.3 | 5.7 | Ci. | Cu. SW | ------ | Ω ○ a. ψ p. |
| 7 | 58.65 | 28.1 | 33.3 | 24.5 | 81.2 | NE quad. | 6.5 | 6.8 | Ci. | Cu. NE | 5.6 | d ⌒ ● a. |
| 8 | 58.17 | 27.7 | 32.8 | 24 | 82.8 | NE | 7.8 | 8.3 | Ci. | Cu. NE | 12.2 | ● a. p. d p. |
| 9 | 58.10 | 27.4 | 32.9 | 24.2 | 85 | ENE | 8.1 | 6.7 | Ci. | Cu. ENE | 1.9 | ● d ⌒ a. ●° p. |
| 10 | 58.89 | 27.6 | 33.4 | 24 | 83.8 | NE | 7.6 | 5.8 | Ci. | Cu. NE | 15.8 | ●° a. p. d ψ° p. |
| 11 | 59.18 | 25.7 | 27.3 | 23.8 | 93.2 | Variable | 5.2 | 10 | Ci.-S. | N., Cu. SW, NE | 62 | ●$^2$ ⊤ a. d Φ p. |
| 12 | 58.53 | 27.6 | 32.3 | 24.7 | 87 | ENE, E | 6.6 | 6.3 | Ci. | Cu. E | 17 | p a. ● a. p. d° p. |
| 13 | 57.78 | 27.2 | 32.4 | 23.4 | 87 | NE quad. | 6 | 3.7 | Ci. | Cu. E, NE | 2.8 | Ω$^2$ ≡ a. ↯ p. |
| 14 | 56.89 | 26.5 | 31.8 | 23.6 | 87.3 | NNE, NE | 5.7 | 8.5 | Ci.-S. | Cu. N quad. | 1.6 | ● Ω$^2$ a. ●° ↯ p. |
| 15 | 55.42 | 27.3 | 32.2 | 24 | 82.7 | W | 6.7 | 9.7 | Ci.-S. | Cu. NW quad. | ------ | Φ Ω a. ⊕ ↯ p. |
| 16 | 53.65 | 28.1 | 32.1 | 25.5 | 78.7 | SW | 19.1 | 10 | Ci.-S. | Cu. SW | ------ | ↯° p. |
| 17 | 54.63 | 28.4 | 32.6 | 25.6 | 77.2 | SW | 12.9 | 10 | Ci.-S. | Cu. SW | ------ | |
| 18 | 55.87 | 26.2 | 30.8 | 24.8 | 87.8 | SSW | 10 | 10 | Ci.-S. | Cu. SSW | 3.1 | d a. p. ●° ↯ p. |
| 19 | 56.63 | 25.2 | 27.8 | 23.9 | 92.8 | SW | 3.8 | 9 | Ci.-S. | Cu., S.-Cu. SW | 33.2 | Ω a. ● a. p. ↯ p. |
| 20 | 58.04 | 25.6 | 32.1 | 24 | 93.8 | SW | 5.2 | 7.8 | Ci.-S. | Cu. SW | 10.2 | Ω$^2$ a. p. ● ⊤ p. |
| 21 | 57.82 | 26.8 | 31.2 | 23.6 | 88.3 | N, NW | 5 | 5.7 | Ci., Ci.-S. NE | Cu. NW, NNW | 42.2 | Ω$^2$ a. d ↯ ● p. |
| 22 | 56.87 | 26.6 | 31.7 | 23.5 | 89 | Variable | 5.4 | 5.8 | Ci.-S., Ci. | Cu. E | .8 | ●$^2$ Ω$^2$ a. ●° ↯ p. |
| 23 | 57.82 | 27.1 | 31.9 | 23.2 | 85.3 | NE | 5.9 | 3.8 | Ci. | Cu. E | 11.4 | ●° Ω$^2$ a. ● ↯ p. |
| 24 | 58.30 | 26.8 | 31.9 | 23.4 | 86 | NE, NNE | 5.5 | 3.8 | Ci. | Cu. N | 2.5 | ● a. p. |
| 25 | 56.98 | 27.9 | 31.3 | 24.3 | 80 | N | 7.3 | 7.7 | Ci.-S., Ci. | Cu. N | 2.5 | Ω$^2$d° ● a. ⌒° ↯ p. |
| 26 | 52.62 | 27.9 | 31.2 | 25.5 | 82.2 | WSW | 13.7 | 10 | Ci.-S. | Cu. NW, WNW | .3 | d ●° p. |
| 27 | 50.18 | 27.7 | 30.1 | 26.4 | 79 | SW | 24.3 | 10 | Ci.-S. | Cu. SW quad. | ------ | d° a. p. p° p. |
| 28 | 53.85 | 28 | 30.5 | 26.8 | 76.3 | SSW | 19.3 | 10 | Ci.-S. | Cu. S | ------ | d° p. |
| 29 | 56.47 | 27.1 | 30.8 | 25.6 | 82.3 | SSW | 11.1 | 8.7 | Ci.-S. | Cu. S | ------ | d° a. ↯° p. |
| 30 | 56.97 | 28.2 | 33.2 | 25.4 | 76.2 | SSW, SW | 11.3 | 10 | Ci.-S. | Cu. S, SSW | ------ | ψ p. |
| Mean | 756.79 | 27.5 | 32.3 | 24.5 | 83.1 | ------------ | 9.1 | 7.4 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | ------------ | 225.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. | | |
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *0–12* | *0–10.* | | | *mm.* | |
| 1 | 757.14 | 26.8? | 30.4 | 23.6 | 88.5? | SW | 2.7 | 8.5 | Ci.-S. | N., Cu. SW | -------- | d° a. ↙° ψ° p. |
| 2 | 57.91 | 27.4 | 32.8 | 23 | 87.5 | SW | 2 | 5.8 | Ci. | Cu. WSW, SW | 15.2 | Ω$^2$≡a.●⌈ʞ↙°p. |
| 3 | 57.94 | 27.4 | 32.7 | 23 | 86.3 | SW | 2 | 5.3 | Ci. | Cu. SW | -------- | Ω$^2$≡a. |
| 4 | 58.28 | 27.3 | 33 | 23.5 | 86.2 | SW | 1.7 | 5.7 | Ci.-S. NE | Cu. SW | -------- | ≡a. ⊤ψ$^2$ p. Ω |
| 5 | 58.27 | 27.8 | 33.4 | 23.5 | 85.5 | SW | 1.3 | 6.8 | Ci. NNW | Cu.-N. SW | 1 | Ω≡◯°a. p ϖ p. |
| 6 | 58.37 | 27.5 | 33.2 | 23.8 | 86 | SW | 1 | 5 | Ci. | Cu.-N. SW | -------- | Ω$^2$≡°∞a.⊤Ωp. |
| 7 | 58.92 | 27.1 | 34.8 | 23.8 | 85.8 | N | 1.3 | 5.8 | Ci., Ci.-S. | Cu. NW | .5 | Ω$^2$≡a. d ϟ ϖ p. |
| 8 | 58.11 | 27.6 | 33.7 | 23.4 | 81.8 | NE quad. | 1.3 | 5.7 | Ci. | Cu. NE | 6.4 | Ω$^2$a. p p. |
| 9 | 57.92 | 28 | 33.4 | 23.9 | 77.3 | E, NNE | 1.8 | 5.3 | Ci. SE | Cu. NE, E | -------- | Ω$^2$≡a. Ω p. |
| 10 | 58.75 | 27.7 | 33.6 | 23 | 75 | E quad. | 1.8 | 5.5 | Ci. SE | Cu. ENE | 2.3 | Ω a. |
| 11 | 59.32 | 25.1 | 26.2 | 23.9 | 94.8 | NE | .8 | 9.8 | Ci.-S. | N. E quad. | 2.8 | ● a. d a.p. |
| 12 | 58.56 | 27.7 | 33.9 | 22.8 | 81.7 | E | 1.2 | 6.3 | Ci. SE | Cu. E | -------- | ϖ° Ω$^2$a. ϟ p. |
| 13 | 57.80 | 26.9 | 33.7 | 23.5 | 85.8 | NE | 1.5 | 5.3 | Ci. | Cu. E | 1.5 | Ω a.● ϟ ↙° ⊤ p |
| 14 | 56.96 | 27.1 | 34.2 | 22.9 | 82.7 | N | 1.3 | 6.5 | Ci.-S. E | Cu. N, NW | 13.5 | Ω$^2$≡a. ⌈ʞ ●$^2$ p. |
| 15 | 56.14 | 26.9 | 32.7 | 23 | 85.3 | NW quad. | 1.7 | 8.3 | Ci.-S. E | N., Cu. NW | -------- | Ω$^2$≡a. |
| 16 | 54.61 | 26.5 | 31.7 | 23.5 | 91.7 | W | 1.3 | 9.8 | Ci.-S. E | N. NW, WNW | 8.9 | Ω a. p° p. |
| 17 | 54.27 | 26.5 | 29.5 | 24 | 88.7 | SW | 3 | 9.3 | Ci.-S. NNE | N. SW | -------- | ● a. |
| 18 | 55.44 | 26.6 | 31.5 | 23.7 | 87.8 | SSW | 2.5 | 7.7 | Ci.-S. N | N. SW | 4.6 | Ω ϖ° a. ● p p. |
| 19 | 56.54 | 25.8 | 31.5 | 23 | 90.2 | SW | 1.3 | 7.5 | Ci.-S. | N. SSW | 14.7 | Ω$^2$a. d$^2$ p$^2$ p. |
| 20 | 58.23 | 25.4 | 32.3 | 23.4 | 92 | S quad. | 1.7 | 8.7 | Ci.-S. | N. SW, SSW | 22.4 | ●$^2$ ⊤ p. |
| 21 | 58.26 | 26.2 | 32.8 | 23 | 88.5 | S, NE | .8 | 7 | Ci.-S. NE | N. NW | 11.9 | Ω a. ●$^2$ ⊤ d° p. |
| 22 | 56.99 | 26.8 | 32.2 | 23.1 | 85.8 | NNE | 1.3 | 7.5 | Ci.-S. SSE, SE | Cu. E | .8 | d°≡a. ϟ p. |
| 23 | 57.59 | 27.6 | 33.2 | 23.4 | 80.8 | NE | 1.8 | 5.7 | A.-Cu. SE | Cu. E | -------- | Ω$^2$d a.⊤ ϟ p. |
| 24 | 58.34 | 27.6 | 33.8 | 22.5 | 79 5 | NE | 1.3 | 5.5 | Ci. SE | Cu. N, NE | -------- | Ω$^2$≡° a. ⊤ p. |
| 25 | 57.58 | 28 | 33.7 | 23 | 80.8 | NNE | 1.5 | 4 | Ci. SE | Cu. NE | -------- | Ω$^2$≡ a. ϟ p. |
| 26 | 54.29 | 27.8 | 33.6 | 24.4 | 84.8 | WSW | 1.8 | 8.7 | Ci.-S. ENE | N. W | 2.8 | Ω≡a. d° p. |
| 27 | 49.39 | 25.3 | 27.2 | 23.2 | 92.5 | SW, WSW | 4.3 | 10 | Ci.-S. | N. W, WSW | 28.5 | ●$^2$a. ϟ p ↙°a.p. |
| 28 | 51.85 | 25.3 | 27.7 | 23 | 90.7 | SSW | 5.2 | 10 | Ci.-S. | N. SW | 5.6 | ● ↙° a. p. |
| 29 | 55.19 | 24.4 | 28.7 | 22.6 | 93.3 | SSW | 3.7 | 10 | Ci.-S. | N. SSW | 87.1 | ●a. ↙°●$^2$ ⌈ʞ p. |
| 30 | 56.91 | 22.8 | 24.2 | 21.6 | 97.5 | SW | 1.5 | 10 | Ci.-S. | N. SW | 123.2 | ●$^2$ ⌈ʞ a. p. |
| Mean | 756.86 | 26.7 | 31.8 | 23.3 | 86.5 | ------------ | 1.9 | 7.2 | ---------------- | ---------------- | -------- | ------------ |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 353.7 | ------------ |

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* | | *Km.p.h.* | *0–10.* | | | *mm.* | |
| 1 | 756.82 | 25.4 | 27.4 | 23.9 | 96.3 | SE | 5.6 | 9.3 | Ci. | N. WSW | 13.8 | ●⊤a.d°●°ϖ°p. |
| 2 | 57.52 | 27.4 | 32.7 | 24.2 | 84.2 | SE, W | 8 | 7.3 | Ci.-S., A.-Cu. | S.-Cu. SW | -------- | ϖ° p. |
| 3 | 57.46 | 28 | 33.4 | 24.2 | 79 | Variable | 8.7 | 4.7 | Ci. | Fr.-Cu., S.-Cu. | -------- | ψ° ϖ° p. |
| 4 | 58 | 27.5 | 32.7 | 24.4 | 83.8 | SE | 7 | 5.3 | Ci. | S.-Cu. | 5.3 | p ⌈ʞ ϖ° ψ p. |
| 5 | 57.94 | 27.5 | 33.1 | 24.2 | 84.5 | SE | 7.4 | 7.7 | Variable | S.-Cu. SW | 10.4 | p ψ° ϖ p. |
| 6 | 57.95 | 28 | 33.1 | 24.4 | 82.2 | SE, W | 7.8 | 4.7 | Ci. | Fr.-Cu. SE | -------- | ⊤ ϖ p. |
| 7 | 58.60 | 28.4 | 33.8 | 24.6 | 80 | NW | 10.3 | 4.7 | Ci. | Fr.-Cu. SE | -------- | ⊤° ψ p. |
| 8 | 57.77 | 28.8 | 34.9 | 24.5 | 79.5 | Variable | 10.1 | 7.3 | Ci. | S.-Cu. SE | -------- | ϟ ⊤ p. |
| 9 | 57.46 | 28.5 | 35.2 | 24.2 | 81.2 | E quad. | 7.8 | 4.8 | Ci., Ci.-S. | S.-Cu. SE | -------- | ϟ ⊤ ϖ p. |
| 10 | 58.38 | 28.5 | 34.6 | 23.9 | 77.8 | Variable | 6.6 | 2.5 | Ci.-S., A.-Cu. | Cu. | -------- | |
| 11 | 58.86 | 28.3 | 33.3 | 24.8 | 80.8 | SE | 5.9 | 8.3 | A.-Cu. | S.-Cu. | -------- | |
| 12 | 58.25 | 28.4 | 34.6 | 23.8 | 79.5 | SE, NW | 8.2 | 6.3 | Ci.-S. | S.-Cu. | -------- | ϟ° ⊤° p. |
| 13 | 57.44 | 28.5 | 34 6 | 24.2 | 78.5 | Variable | 6.8 | 4.5 | ---------------- | S.-Cu. | -------- | ⌒ ϟ ⊤ p. |
| 14 | 56.82 | 28.2 | 33.9 | 24 | 80 | Variable | 8.1 | 6.2 | Ci. | Cu., S.-Cu. | 2 | p° ϟ° p. |
| 15 | 55.93 | 27.8 | 31.8 | 23.8 | 79 | SE, NW | 9.5 | 8 | A.-Cu. | S.-Cu. | -------- | ◯° a. |
| 16 | 54.26 | 26.2 | 29.9 | 24.2 | 92.7 | NW quad. | 13.6 | 9.8 | A.-Cu. | N. NW | 73.1 | d° a. p° ●$^2$ p. |
| 17 | 53.68 | 26.2 | 28 | 23.5 | 89.8 | SW quad. | 13.3 | 10 | A.-Cu. | N. WNW | 14.3 | ● a. p. ϟ p. |
| 18 | 54.62 | 26.4 | 31.3 | 23.7 | 87.2 | SE | 13.7 | 9 | A.-Cu. | S.-Cu. SSW, SE | 1.5 | d ● a. p p. |
| 19 | 55.98 | 26.3 | 33.2 | 23.2 | 87.2 | SE | 10.4 | 7.7 | Ci., A.-Cu. | S.-Cu. SE | -------- | d° ϟ° p. |
| 20 | 57.64 | 27.1 | 33.3 | 23.5 | 86.7 | SE | 8.3 | 7.5 | A.-Cu. | S.-Cu. SE | -------- | |
| 21 | 57.90 | 26.8 | 32.7 | 23.7 | 87.2 | Variable | 9.7 | 9 | A.-Cu. | Variable | 3.1 | d° p. |
| 22 | 56.63 | 26.9 | 33.1 | 23.8 | 87.8 | SE | 6.5 | 7.8 | A.-Cu. | S.-Cu., N. SE | 3.5 | p a. p. ⌒ ϟ° ⊤ p. |
| 23 | 57.17 | 28 | 34.9 | 23.5 | 81.5 | S quad. | 9.5 | 4.8 | Ci.-S. | S.-Cu. | 16.3 | ϟ$^2$ ⌈ʞ$^2$ p p. |
| 24 | 58.20 | 27.4 | 32.1 | 22.7 | 84 | NW | 8.3 | 7.5 | Ci.-S. | S.-Cu. SE | .8 | ϟ° p. |
| 25 | 57.27 | 28.2 | 32.6 | 24.5 | 83.8 | NW | 10.2 | 4.7 | Ci. | S.-Cu. | -------- | d a. ϟ° p. |
| 26 | 53.80 | 28.2 | 31.8 | 25.1 | 86.5 | W quad. | 16.8 | 8.7 | A.-Cu. | Cu., S.-Cu. NW | 3.4 | d° a. ϟ p. |
| 27 | 48.11 | 25.8 | 28.3 | 23.5 | 94.7 | W quad. | 44.8 | 10 | ---------------- | N. NW | 179.2 | d°●↙°a.●$^2$↙ p. |
| 28 | 50.18 | 23.8 | 24.6 | 22.5 | 95.8 | SW, SE | 23 | 10 | ---------------- | N. SW | 91.4 | ↙°a. ϟ p.●$^2$ a.p. |
| 29 | 53.82 | 24.5 | 26.9 | 22 | 95.7 | SE | 18.1 | 10 | A.-Cu. | N. SW | 68.9 | ϟ ⊤ ● a. p. |
| 30 | 55.93 | 22.8 | 24.1 | 21.9 | 98 | SE quad. | 17.9 | 10 | ---------------- | N. SW | 62.5 | ●$^2$⌈ʞ$^2$a.●⌈ʞ°p. |
| Mean | 756.35 | 27.1 | 31.9 | 23.8 | 85.5 | ------------ | 11.4 | 7.3 | ---------------- | ---------------- | -------- | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ---------------- | ---------------- | 549.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| Day | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Perct.* | | *Km.p. h.* | *0–10.* | | | *mm.* | |
| 1 | 634.45 | 17.3 | 18.2 | 16.3 | 99.8 | WSW | 58 | 10 | ------ | ------ | 86.8 | ≡² ● ↙ a. p. |
| 2 | 35.82 | 17.2 | 19.2 | 15.5 | 99.3 | WSW, W | 22.4 | 10 | ------ | Fr.-N., Cu. | 2.5 | ≡² ●° a. p. |
| 3 | 35.77 | 17.9 | 22.7 | 14.7 | 91.3 | W | 12.5 | 7.9 | Ci. | S.-Cu. WSW | ------ | Ω² a. ≡ d p. |
| 4 | 36.17 | 17.8 | 21.3 | 15.2 | 90.8 | W | 11.6 | 9.9 | Ci.-S. NNE | S.-cu.sw, swbyw | ------ | Ω² ○ a. ⊕ p. |
| 5 | 36.22 | 18.2 | 22.8 | 15.5 | 87.7 | W | 13.2 | 9.9 | Ci.-S. N | S.-Cu. SW quad. | ------ | ○° ⊕ a. d p. |
| 6 | 36.21 | 18.3 | 22.9 | 15.9 | 89 | W | 13.5 | 9.3 | Ci.-S. NE | S.-Cu. W | 1.6 | Ω a. d° ☈ ● p. |
| 7 | 36.81 | 18.2 | 24.1 | 15.5 | 85.3 | Variable. | 10.7 | 5.9 | Ci. | Cu. | .5 | Ω a. d° ≡ ⊤ p p. |
| 8 | 36.14 | 18.8 | 24.3 | 16.3 | 88.5 | Variable. | 11.7 | 6 | Ci. | Cu. EbyS | ------ | Ω a. d ≡² ⊤ p. |
| 9 | 35.98 | 18.8 | 24.8 | 16.5 | 90 | E, W | 12.6 | 6 | Ci. | Fr.-Cu. NE | ------ | Ω a. ≡ p° p. |
| 10 | 36.79 | 18.6 | 23.9 | 15.5 | 88 | Variable. | 8.4 | 5.7 | Ci. | S.-Cu. E | ------ | Ω² a. ≡ p. |
| 11 | 37.10 | 18.9 | 21.8 | 16.5 | 84.2 | E quad. | 12.3 | 9.6 | A.-Cu. ENE | S.-Cu. E | ------ | ≡ ⊤° p. |
| 12 | 36.59 | 18.9 | 23.8 | 16.1 | 87.7 | E quad. | 10 | 8.1 | A.-Cu. E | Fr.-Cu. ESE | 13.9 | Ω° a. ● ≡ p. |
| 13 | 35.92 | 18.5 | 23.8 | 16.3 | 90.7 | E quad. | 9.8 | 6 | Ci. | S.-Cu. EbyN | 26 | d ⊤ ☈° ● p. |
| 14 | 35.22 | 17.9 | 23.7 | 15.7 | 93.7 | W quad. | 11.2 | 9.7 | Ci.-S. ENE | Fr.-S., N. NNE | 35.1 | ● p. ≡ ○ ⊕ a. p. |
| 15 | 34.41 | 18.6 | 22.6 | 15.4 | 87 3 | WSW | 9.6 | 9.6 | Ci.-S. E | S.-Cu. ENE | ------ | ○ ⊕ a. p. ≡° p. |
| 16 | 32.75 | 17.9 | 19.8 | 16.5 | 93 | WNW | 19 | 10 | A.-S. | Fr.-N. WNW | 90.9 | ⊕ a. ● ≡ p. |
| 17 | 31.43 | 16.8 | 17.9 | 14 | 98.2 | WSW | 52.3 | 10 | ------ | N. WbyS | 110.6 | ↙ ●² a. p. |
| 18 | 32.98 | 16.8 | 19.6 | 15.5 | 93 | SE | 19.2 | 10 | A.-S. | Fr.-Cu. SE | ------ | ⊕ a. p. |
| 19 | 34.12 | 17.7 | 23.1 | 14.6 | 91.3 | W, SE | 12.3 | 9 | Ci. W | Cu. SbyE | 42.7 | Ω○°a.●☈°≡°p. |
| 20 | 35.72 | 17.9 | 22.8 | 15.1 | 90.3 | W | 7.8 | 9.4 | Ci.-S. S | Fr.-N. WNW | 18.5 | ⊕² ○² a. ● ≡ p. |
| 21 | 35.94 | 17.2 | 21.6 | 16 | 96.5 | E | 10.4 | 9.6 | A.-Cu. NE | Cu., Fr.-N. | 22.9 | Ω ●° a. ● ≡ p. |
| 22 | 34.84 | 18.3 | 23.3 | 16.4 | 91.3 | SE quad. | 11 | 9.4 | Ci.-S. ENE | S.-Cu. E | 4.4 | d ⊤ ● p. |
| 23 | 35.62 | 18.7 | 24.6 | 15.4 | 87.2 | E, W | 13.4 | 5.9 | Ci. | Cu. | ------ | p° ≡ ☈ p. |
| 24 | 36.30 | 18 | 23.2 | 15.5 | 96.2 | Variable. | 8.3 | 8.6 | Ci. SSE | Cu.-N. E | 4.8 | Ω a. d° ≡ ● p. |
| 25 | 35.70 | 19 | 23.9 | 15.7 | 92 | W | 10 | 6.6 | Ci. | S.-cf. ESE | ------ | Ω² a. ≡ p. |
| 26 | 32.80 | 19 | 24.2 | 16.7 | 91.3 | NW quad. | 14.3 | 10 | Ci.-S. ESE | Fr.-N. NNW, WNW | 19.1 | Ω ○° ⊕ a. ● p. |
| 27 | 25.05 | 17.4 | 18.2 | 16.3 | 99.3 | WNW | 82.3 | 10 | ------ | ------ | 799.8 | ≡² ↙² ●² a. p. |
| 28 | 26.78 | 15.7 | 17.6 | 14.1 | 97.5 | SW | 94.4 | 10 | ------ | N. SW | 223.7 | ≡²●²↙²a.●↙p. |
| 29 | 31.53 | 16.5 | 18.7 | 15.3 | 91.7 | SW | 51.8 | 10 | A.-S. | N. SWbyS | 109.7 | ↙° a. ⊤ ↙ ≡ p.●² |
| 30 | 33.11 | 16.2 | 17.6 | 14.3 | 97 | SW | 50.6 | 10 | ------ | N. SWbyS | 89.7 | ● ↙ a. p. ≡° p. |
| Mean | 634.48 | 17.9 | 21.9 | 15.6 | 92 | ------ | 22.8 | 8.7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 1,703.2 | |

[1] The barometric readings of this station are not reduced to sea level.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Perct.* | | *Km.p. h.* | *0–10.* | | | *mm.* | |
| 1 | 755.70 | 25.8 | 27.9 | 22.6 | 91.5 | S quad. | 18.9 | 9.8 | A.-Cu. | N.-cf. SW | 52.6 | ● ⊤° a. p. ϟ p. |
| 2 | 57.02 | 27.7 | 30.3 | 24.5 | 83.8 | S quad. | 19 | 7.2 | Ci.-S. | S.-Cu. S, SW | ------ | ⌽ p. |
| 3 | 57.20 | 27.6 | 30.5 | 23.4 | 80.8 | S quad. | 14.1 | 5.7 | Ci.-S. | S.-Cu. S | ------ | Ω a. ⌽ p. |
| 4 | 57.44 | 27.8 | 30.9 | 23.9 | 79.3 | S quad. | 14 | 6.7 | Ci.-S. | S.-Cu. S | ------ | Ω a. ⌽ p. |
| 5 | 57.63 | 27.8 | 31.1 | 24 | 80.8 | S | 12.1 | 7.5 | Ci. SW | S.-Cu., Cu. | ------ | ⌽² p. |
| 6 | 58.04 | 28 | 31.2 | 23.9 | 82 | S, SE | 10.1 | 6.5 | Ci.-S. | S.-Cu. S | ------ | Ω a. ϟ d p. |
| 7 | 58.53 | 27.8 | 32.2 | 23.5 | 80.7 | NW quad. | 6.4 | 4.3 | Ci.-S., Ci. | Fr.-Cu. NW | ------ | Ω a. p. ϟ p. |
| 8 | 57.64 | 27.8 | 31.7 | 22.5 | 78 | S quad. | 5.5 | 4.2 | Ci. | Fr.-Cu. SW | ------ | Ω² ≡ ⌽² a. Ω p. |
| 9 | 57.45 | 28.3 | 32.2 | 23.5 | 80.2 | Variable | 5.5 | 2.3 | Ci. | Fr.-Cu. SW | ------ | Ω a. |
| 10 | 58.36 | 28.4 | 32.7 | 23.5 | 80.8 | NW | 6.1 | 3.7 | Ci.-S., Ci. | Fr.-Cu. SW | ------ | Ω a. |
| 11 | 58.70 | 27.8 | 32.8 | 23.9 | 84.8 | E quad. | 5.3 | 6.8 | Ci.-S. | Fr.-Cu. SW | ------ | ≡ Ω² a. d ⊤° Ω p. |
| 12 | 58.24 | 28.3 | 32.6 | 23.7 | 79.3 | SE, NW | 7 | 6.2 | Ci.-S. | Cu., S.-Cu. | 9.4 | d° ϟ p |
| 13 | 57.37 | 27.4 | 32.6 | 23 | 83.5 | Variable | 7.5 | 4.3 | Ci.-S. | Fr.-Cu. NW | 1.5 | ● a. p. ⊤° ⌒° ϟ p. |
| 14 | 56.63 | 27.9 | 32.7 | 22.6 | 78.2 | E quad. | 8.2 | 4.3 | Ci. | Fr.-Cu. W | ------ | Ω a. |
| 15 | 55.82 | 27 | 32.4 | 21.4 | 74.3 | NE quad. | 12.7 | 5 | Ci.-S. SE | Cu. | ------ | ψ² Ω a. |
| 16 | 53.99 | 26.2 | 28.2 | 23 | 89.2 | N quad. | 9.3 | 9.5 | Ci.-S. | S.-Cu. NE | 35.3 | ψ Ω a. ● a. p. |
| 17 | 51.12 | 25.2 | 27 | 22.1 | 91.7 | S quad. | 28.2 | 10 | ------ | N. S | 160 | ●² a. p. ↙° p. |
| 18 | 53.59 | 25.7 | 27.6 | 22.2 | 86.5 | S quad. | 12.6 | 9 | Ci.-S. | S.-Cu. SE | .8 | ● a. |
| 19 | 55.77 | 26.4 | 31.5 | 22 | 87.5 | N quad. | 7.4 | 7.2 | Ci.-S. | S.-Cu. | 1.8 | Ω ≡° a. ϟ ● p. |
| 20 | 57.54 | 26.8 | 32.5 | 22.5 | 80.2 | Variable | 6.1 | 6.5 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 21 | 57.89 | 26.3 | 31.4 | 22.5 | 84 | N quad. | 7.7 | 4.8 | Ci.-S. | Cu. | 6.3 | Ω² ≡ a. ● p. |
| 22 | 56.52 | 26.4 | 30.7 | 22.1 | 86.8 | SE quad. | 6 | 5.7 | Ci.-S. | Cu. NW | 3 | Ω ≡° a. ⊤° ● ϟ p. |
| 23 | 57.29 | 27.1 | 31.6 | 22.4 | 83.8 | NW quad. | 6.4 | 4.8 | Ci.-S. | Fr.-Cu. N | 5.3 | Ω a. ⌒° ● ϟ ⊤° p. |
| 24 | 58.09 | 27 | 31 | 23.1 | 87.7 | NW quad. | 7 | 4.2 | Ci. | S.-Cu NW | ------ | ≡ Ω² a. Ω ≡° p. |
| 25 | 57.13 | 27.5 | 32.5 | 22.4 | 78.7 | N quad. | 6.8 | 1.8 | Ci. | Cu. | ------ | Ω² ≡ a. |
| 26 | 54.09 | 27 | 31 | 22.7 | 81.3 | N quad. | 17.5 | 7 | Ci.-S. NE | Cu. N | 40.4 | Ω a. ●² p. |
| 27 | 43.56 | 25.3 | 26.6 | 22 | 92.8 | NW quad. | (1) | 10 | ------ | N. N | 88.9 | ↙° a. ●² a. p. ↙ p. |
| 28 | 42.37 | 25 | 26.6 | 22.5 | 93.5 | E quad. | ------ | 10 | ------ | N. SW | 128.5 | ↙ ●² a. p. |
| 29 | 51.02 | 25.2 | 28.5 | 22.4 | 86.2 | SE quad. | ------ | 10 | Ci.-S. | S.-Cu. SE | 57.6 | ● a. p. ☈° p. |
| 30 | 53.23 | 24.7? | 26.4 | 21.5 | 86.7? | ESE | 31.3 | 10 | ------ | N. SE | 98.7 | ●° a. ●² ⊤° p. |
| Mean | 755.50 | 26.9 | 30.6 | 22.8 | 83.8 | ------ | 11.1 | 6.5 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 690.1 | |

[1] At 10.30 a. m. of the 27th, the wire of the anemograph was broken by the violence of the wind.

## METEOROLOGICAL DATA, ETC.—Continued.

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12 | 0-10. | | | mm. | |
| 1 | 754.74 | 27 | 33.2 | 22.9 | 85.5 | NE | 0.2 | 8.2 | Ci.-S., A.-Cu. | Cu.-N. NW, W | ------ | Ω a. |
| 2 | 56.10 | 28.6 | 35.8 | 23.2 | 80.5 | SE | .2 | 6 | Ci.-S. | Cu. W | ------ | Ω² a. |
| 3 | 56.26 | 29.1 | 36.4 | 24 | 80.5 | SE | .8 | 7.3 | Ci.-S. | Cu. | ------ | Ω² a. ⊍ ⊕ p. |
| 4 | 56.84 | 28.6 | 34.5 | 24.8 | 81.3 | Variable | 1.2 | 7.5 | Ci.-S. | S.-Cu. S | ------ | Ω² a. ⊍ ⊕ p. |
| 5 | 56.94 | 29.3 | 35.6 | 24.8 | 78.7 | Variable | .5 | 6.3 | Ci.-S. | Cu. S | ------ | Ω² ≡ a. ⊍² < p. |
| 6 | 57.57 | 28.2 | 35.6 | 22.5 | 81 | Variable | 1 | 7.5 | ------ | S.-Cu., Cu.-N. S, N | 4.6 | Ω² ≡ a. ⊤ ⌈↙ ● p. |
| 7 | 58.54 | 27.6 | 34.9 | 22.5 | 82.7 | Variable | .5 | 4.8 | Ci. | Cu. S | ------ | Ω² a. |
| 8 | 58.07 | 28.1 | 35.4 | 21.6 | 75.7 | SW, NW | .3 | 1.8 | ------ | Cu. S | ------ | Ω a. |
| 9 | 57.96 | 28.1 | 35.8 | 22.6 | 79.8 | SW, NE | .3 | 3.2 | ------ | Cu. E | ------ | Ω² ≡ a. |
| 10 | 58.98 | 27.8 | 35.5 | 21.8 | 77.5 | NE, NW | .3 | 4.7 | Ci., Ci.-S. | Cu. N, E | ------ | Ω a. |
| 11 | 59.78 | 27.1 | 33.8 | 23.6 | 84.5 | E quad. | .7 | 7.7 | Ci.-S., Ci.-Cu. | Cu., Cu.-N. E, NE | ------ | Ω a. ⌈↙ p. |
| 12 | 58.76 | 27.7 | 34.2 | 23.2 | 79.3 | S quad. | .7 | 3.8 | Ci.-Cu. | Cu. | ------ | Ω² a. |
| 13 | 57.78 | 27.5 | 34.6 | 23.5 | 81.8 | E, NE | .5 | 4 | ------ | Cu. S | ------ | Ω a. |
| 14 | 57.22 | 27 | 33.9 | 21.5 | 78 | NE quad. | .7 | 4.7 | Ci., Ci.-S. | Cu. | ------ | Ω² ≡ a. ◯² a. p. |
| 15 | 56.08 | 25.5 | 29.9 | 22.8 | 87.5 | NE, NW | .8 | 8.2 | Ci.-S. | Cu.-N. NW | 39 | Ω a. ● d p. |
| 16 | 52.33 | 24.9 | 26.2 | 23.5 | 93.7 | SW | .5 | 10 | ------ | N. | 146.5 | ●² a. p. |
| 17 | 49.68 | 24.5 | 26.4 | 23.1 | 89.5 | SE | 2.3 | 9.5 | ------ | N. SE | 20.6 | ●² a. ● p. |
| 18 | 54.04 | 26.8 | 33 | 22 | 83.5 | SE | .7 | 8 | Ci.-S. | Variable | ------ | ◯² a. |
| 19 | 55.88 | 27.2 | 34.6 | 22.8 | 82.2 | E | .5 | 6.7 | Ci. | Cu. E | ------ | Ω a. d p. |
| 20 | 57.49 | 27.4 | 33.4 | 24 | 84 | NE | .3 | 7.2 | Ci.-S. | Cu. S, N | ------ | Ω² a. |
| 21 | 58.10 | 26.5 | 32.5 | 24 | 88.7 | N quad. | 1 | 7.7 | Ci.-S. | Cu. NE | ------ | Ω a. |
| 22 | 57.23 | 27 | 33.4 | 23.3 | 83.2 | NE | .2 | 7.2 | ------ | Cu.-N. NE | 2.8 | Ω² ≡ a. d ⊤ ● p. |
| 23 | 57.61 | 27.6 | 34.6 | 23.5 | 83 | SE | .8 | 4.7 | Ci. | Cu. S | ------ | Ω² ≡ a. < p. |
| 24 | 58.35 | 27.2 | 34 | 22.2 | 82.2 | NNW, NE | .8 | .7 | ------ | Fr.-Cu. | ------ | Ω² a. |
| 25 | 57.86 | 26.3 | 32.5 | 21.8 | 84.8 | NW | 1 | 4.8 | ------ | Variable N | 24.6 | Ω² a. ● p. |
| 26 | 53.75 | 25.9[1] | 29.6 | ------ | [1]93 | NW | 2 | 9.7 | ------ | N. N | 91.6 | ● a. ●² ⊤ ↙° p. |
| 27 | 36.87 | ------ | ------ | ------ | ------ | NW | 11.2 | 10 | ------ | N. NW | [2]160.8? | ●² ↙² a. p. |
| 28 | 44.49 | ------ | ------ | ------ | ------ | SE | 8.2 | 10 | ------ | N. SE | 22.1 | ↙² ●² a. ↙ d p. |
| 29 | 52.48 | 25.8 | 29.4 | 23.3 | 79.5 | SE quad. | 1.3 | 8.3 | Ci.-S. | N.-cf. SE | 7.6 | ● a. d a. p. |
| 30 | 54.09 | 24.7 | 27 | 23 | 88 | SE | 2.2 | 10 | ------ | Cu.-N. SE | ------ | ● a. d a. p. |
| Mean | 755.40 | 27.1 | 33.1 | 23 | 83.2 | ------ | 1.4 | 6.7 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 520.2? | |

[1] Deduced from 5 observations.

[2] Between 2 and 6 a. m. of the 28th, the raingauge was blown down by hurricane winds.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 753.96 | 26 | 29.6 | 24 | 83.2 | SW, S | 19.2 | 10 | Ci.-S. | S.-Cu. SW | 12.7 | ● p. |
| 2 | 55.60 | 27.6 | 33.5 | 23.5 | 83.2 | S | 11.6 | 6.7 | Ci. E | S.-Cu. | ------ | ◯ a. |
| 3 | 56.09 | 28.3 | 34.5 | 24 | 77.5 | SW | 8.9 | 4.7 | A.-Cu. S | S.-Cu. | ------ | ⊍ p. |
| 4 | 56.61 | 27.2 | 32.1 | 24.2 | 84.8 | Variable | 10.8 | 9.7 | Ci.-S. E | S.-Cu. | ------ | ∞ a. ⊍ p. |
| 5 | 56.75 | 28.4 | 34 | 24.5 | 81.2 | Variable | 6.9 | 7 | Ci. NE | S.-Cu., Cu.-N., SW, S | ------ | ◯ a. ⊍ p. ∞ a. p. |
| 6 | 57.38 | 28 | 33.3 | 24.6 | 81.5 | Variable | 9.5 | 4 | Ci.-S. E | Cu.-N. S | ------ | ∞ Ω a. ⊤ < p. |
| 7 | 58.48 | 27.8 | 32.7 | 24.5 | 81.3 | E quad. | 11.2 | 2.7 | Ci., Ci.-S. | Cu. S | ------ | ∞ a. < p. |
| 8 | 58.03 | 27.9 | 32.9 | 23.7 | 77.7 | E quad. | 11 | .2 | ------ | Cu. | ------ | Ω a. |
| 9 | 57.88 | 27.8 | 32.8 | 23.6 | 79 | E quad. | 10.8 | 0 | ------ | ------ | ------ | Ω a. |
| 10 | 59.07 | 27.3 | 32.4 | 23.6 | 81 | E quad. | 10.4 | 1.8 | A.-Cu. E | Cu.-N. | ------ | Ω a. |
| 11 | 59.65 | 27.5 | 32.4 | 24.5 | 80.5 | E quad. | 9.8 | 3.2 | A.-Cu. SE, E | Cu.-N. | ------ | Ω a. |
| 12 | 58.58 | 27.1 | 32.9 | 23.2 | 83.8 | E, SE | 11 | 1.3 | Ci.-S. E | Cu.-N., S.-Cu. | ------ | Ω a. |
| 13 | 57.74 | 27.4 | 32.5 | 24.1 | 82.5 | E quad. | 9.8 | .3 | ------ | Cu.-N. SE | ------ | Ω a. |
| 14 | 57.30 | 27.6 | 32.2 | 23.2 | 77.8 | NE | 7.8 | 5.3 | Ci. S | Cu.-N. NE | ------ | Ω ⌒ a. ◯ a. p. |
| 15 | 55.78 | 26.8 | 30.8 | 23.1 | 84.8 | N | 19.6 | 6.3 | Ci.-S., Ci. E | Cu.-N. N | 11.4 | Ω a. ● p. |
| 16 | 51 | 27 | 28 | 24.6 | 90 | N, NW | ------ | 10 | ------ | S.-Cu., N. NW, N | 261.1 | ●² a. p. ↙° p. |
| 17 | 46.88 | 24.1 | 27.4 | 23 | 90.3 | S quad. | ------ | 10 | Ci.-S. | N. | 24.6 | ↙ a. ● a. p. ↙° p. |
| 18 | 54 | 25.6 | 29.2 | 22.4 | 83.7 | S | 9.5 | 10 | A.-S., Ci.-S. | S.-Cu. | 6.1 | ● p. |
| 19 | 55.62 | 26 | 32.1 | 22.9 | 88.2 | E | 4.4 | 8.7 | A.-Cu. SE, E | S.-Cu. | .8 | ●° p. |
| 20 | 57.38 | 26.7 | 31.7 | 23.6 | 85.7 | Variable | 7.6 | 6.3 | Ci.-S. E | Cu.-N. N | 12.8 | Ω a. ● ⊤ p. |
| 21 | 58.07 | 26.6 | 31.4 | 23.8 | 85.7 | NE | 10 | 6 | A.-Cu. SE | Cu.-N. NE | 6.4 | ● a. p. |
| 22 | 57.13 | 26.9 | 31.7 | 23.6 | 84.5 | E quad. | 12.4 | 3.5 | A.-Cu. SE | Cu.-N. | ------ | ● ⌒ a. ⊤ p. |
| 23 | 57.55 | 27.2 | 32 | 23.8 | 82.3 | E quad. | 12.6 | .5 | Ci. E | Cu.-N., S.-Cu. | ------ | Ω a. < p. |
| 24 | 58.40 | 27 | 32 | 23 | 80.5 | E | 8.6 | 0 | ------ | ------ | 2.5 | Ω ≡° a. |
| 25 | 57.98 | 26.7 | 32.4 | 23.6 | 86.5 | NE | 10.9 | 6 | ------ | Cu.-N. E, NE | 19.8 | ⌒ a. ● a. p. |
| 26 | 54.08 | 27 | 30.8 | 24.4 | 86 | N | 27.8 | 10 | A.-Cu., Ci. E | Cu.-N. N | 21 | ● a. p. |
| 27 | 37.51 | 26 | 27.5 | 23 | 88 | Variable | 53.6 | 10 | ------ | Cu.-N., N. NE, E | 52.8 | ● ↙ a. p. |
| 28 | 43.81 | 23.9 | 26.7 | 22 | 91.2 | SE | 45.4 | 10 | ------ | N., S.-Cu. | 26.9 | ↙ a. ● a. p. |
| 29 | 51.98 | 24.9 | 28 | 22.4 | 87.5 | SE, S | 10.9 | 10 | ------ | S.-Cu. S | 1.8 | ●° a. |
| 30 | 53.40 | 24.4 | 27.4 | 22.5 | 86.8 | S | 19.5 | 10 | ------ | S.-Cu. S | .3 | ●° a. |
| Mean | 755.12 | 26.8 | 31.2 | 23.6 | 83.9 | ------ | 14.3 | 5.8 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 461 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | ------ | 22.2 | 91 | 70 | 4 | 8 | ------ | Ω° a. ⊕² p. |
| 2 | ------ | 21.6 | 96 | 77 | 5 | 6 | ------ | Ω° a. |
| 3 | ------ | 21.5 | 89 | 70 | 2 | 6 | ------ | Ω° a. |
| 4 | ------ | 21.4 | 95 | 67 | 5 | 6 | ------ | Ω° a. |
| 5 | ------ | 21.3 | 93 | 75 | 6 | 6 | ------ |  |
| 6 | ------ | 21.3 | 95 | 70 | 5 | 6 | ------ | Ω° a. ϟ² p. |
| 7 | ------ | 21 | 94 | 67 | 8 | 6 | 3.8 | Γ p a. ●° p. |
| 8 | ------ | 22.1 | 82 | 70 | 10 | 8 | 16.8 | Ω° a. ψ² ● p. |
| 9 | ------ | 21.8 | 96 | 76 | 6 | 10 | ------ | Ω° a. ψ° p |
| 10 | ------ | 21.9 | 93 | 77 | 6 | 10 | ------ | Ω° a. p ψ° p. |
| 11 | ------ | 21.5 | 85 | 78 | 6 | 7 | 3 | ●° a. ψ° p. |
| 12 | ------ | 21.1 | 89 | 76 | 10 | 10 | ------ | d a. ψ² p. |
| 13 | ------ | 20.5? | 86 | 71 | 10 | 8 | 3.8 | p a. ●° p. |
| 14 | ------ | 20.5 | 87 | 75 | 10 | 10 | 9.1 | ●° a. ● ψ° p. |
| 15 | ------ | 20.8 | 87 | 69 | 10 | 10 | 7.1 | d ● p. |
| 16 | ------ | 21.2 | 83 | 80 | 10 | 10 | ------ | ⊤ d a. |
| 17 | ------ | 22? | 80 | 72 | 10 | 10 | ------ |  |
| 18 | ------ | 23.8 | 90 | 70 | 10 | 10 | ------ | Ω² a. |
| 19 | ------ | 22.6 | 92 | 72 | 10 | 10 | ------ | Ω² a. |
| 20 | ------ | 21.9 | 91 | 73 | 6 | 10 | ------ | Ω° a. |
| 21 | ------ | 21.6 | 93 | 70 | 6 | 6 | ------ | Ω° a. Γ p. |
| 22 | ------ | 22.2 | 95 | 72 | 6 | 6 | ------ | Ω° a. Γ d p. |
| 23 | ------ | 21.2 | 92 | 68 | 6 | 7 | ------ | Ω° a. ϟ² p. |
| 24 | ------ | 20.9 | 92 | ------ | 4 | 5 | ------ | Ω a. |
| 25 | ------ | 21.6 | 96 | 70 | 2 | 6 | ------ | Ω ≡° a. |
| 26 | ------ | 21.8 | 94 | 65 | 6 | 10 | ------ | Ω a. Γ p. |
| 27 | ------ | 21.8 | 88 | 61 | 10 | 10 | ------ | Ω° a. |
| 28 | ------ | 23.2 | 92 | 70 | 8 | 10 | ------ | Γ°Ω a. ϟ°d°p. |
| 29 | ------ | 23 | 94 | 57 | 10 | 10 | ------ | ϟ° Ω a. |
| 30 | ------ | 22.9 | 92 | 61 | 8 | 10 | ------ | Ω a.p ⊕° p. |
| Mean | ------ | 21.7 | 90.7 | 70 7 | 7.2 | 8.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 43.6 |  |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32 | 21.5 | 96 | 70 | 1 | 9 | 9.6 | Ω a. ● p. |
| 2 | 31 | 21.7 | 89 | 72 | 10 | 9 | ------ | ● d a. |
| 3 | 31.8 | 21.5 | 96 | 64 | 0 | 4 | ------ | Ω a. |
| 4 | 31.1 | 22.4 | 96 | 77 | 10 | 9 | ------ | Ω a. |
| 5 | 30.7 | 22.5 | 97 | 76 | 3 | 8 | ------ | Ω p a. |
| 6 | 30.5 | 22.4 | 95 | 74 | 3 | 5 | 14.2 | Ω a. ● p. |
| 7 | 28.5 | 22.2 | 97 | 78 | 10 | 10 | 7.6 | ● a. |
| 8 | 29.8 | 22.6 | 96 | 80 | 10 | 5 | ------ | d a. |
| 9 | 29 3 | 22.2 | 97 | 89 | 9 | 10 | 13.7 | Ω ● a. d ⌒ p. |
| 10 | 28.8 | 22 | 96 | 89 | 10 | 10 | 9.6 | Ω a. ● p. |
| 11 | 28.9 | 22 | 98 | 84 | 10 | 10 | 1 | d a. p. |
| 12 | 29.1 | 22.4 | 97 | 87 | 10 | 10 | 5.1 | ● d a. |
| 13 | 29.9 | 21.5 | 96 | 72 | 10 | 10 | 17.5 | Ω ● a. |
| 14 | 26.9 | 22.2 | 98 | 84 | 10 | 10 | 13.2 | ● d a. p. |
| 15 | 28.8 | 22.2 | 94 | 81 | 10 | 10 | 29.5 | d a. ● a. p. ↙° p. |
| 16 | 31.5 | 21.6 | 97 | 75 | 10 | 4 | ------ |  |
| 17 | 32 | 22.5 | 91 | 67 | 9 | 4 | ------ | Ω a. |
| 18 | 28.8 | 22.5 | 96 | 83 | 10 | 10 | 10.2 | Ω ● a. |
| 19 | 30.8 | 22.3 | 97 | 84 | 10 | 10 | ------ | Ω a. |
| 20 | 32.9 | 21.2 | 98 | 75 | 3 | 5 | ------ | Ω a. |
| 21 | 31.9 | 22.2 | 97 | 76 | 10 | 10 | 1.3 | Ω ●° a. ⊤ p. |
| 22 | 30.8 | 22.5 | 96 | 78 | 10 | 10 | ------ | Ω a. |
| 23 | 32.3 | 22.5 | 97 | 77 | 10 | 5 | ------ | Ω a. |
| 24 | 31.8 | 21 | 96 | 73 | 0 | 3 | ------ | Ω a. |
| 25 | 30.5 | 22.1 | 96 | 76 | 0 | 3 | 5.6 | Ω a. |
| 26 | 30.5 | 23.5 | 97 | 78 | 10 | 9 | ------ | ● a. ○ p. |
| 27 | 31.8 | 23.4 | 94 | 73 | 8 | 9 | ------ | Ω a. |
| 28 | 31.9 | 22 | 95 | 70 | 10 | 10 | ------ | Ω a. |
| 29 | 31.5 | 22 | 97 | 81 | 10 | 10 | ------ | Ω a. |
| 30 | 29.9 | 21.6 | 96 | 95 | 10 | 10 | .8 | Ω a. p ψ p. |
| Mean | 30.5 | 22.1 | 95.9 | 77.9 | 7.9 | 8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 138.9 |  |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.8 | 23.5 | 92 | 71 | 8 | 7 | 3.3 |  |
| 2 | 29.6 | 23.2 | 90 | 72 | 10 | 2 | 2 | Γ a. ●° a. p. |
| 3 | 29.5 | 22.6 | 92 | 77 | 2 | 9 | ------ |  |
| 4 | 29.5 | 22.5 | 90 | 79 | 9 | 5 | ------ |  |
| 5 | 29.5 | 23 | 94 | 74 | 6 | 9 | ------ |  |
| 6 | 29.6 | 23.5 | 92 | 78 | 6 | 9 | 7.6 | ● p. |
| 7 | 28.9 | 19.9? | 93 | 84 | 8 | 9 | 5.6 | ● a. |
| 8 | 30.8 | 23.2 | 77 | 73 | 6 | 4 | ------ |  |
| 9 | 29.1 | 22.2 | 89 | 81 | 5 | 7 | ------ |  |
| 10 | 28.8 | 22.2 | 91 | 86 | 10 | 10 | ------ | d p. |
| 11 | 28.6 | 23.5 | 93 | 81 | 10 | 9 | 1 | d p. |
| 12 | 28 | 23 | 90 | 75 | 10 | 10 | 9.9 | ● d a. p. |
| 13 | 28.5 | 22.6 | 93 | 76 | 10 | 8 | 8.1 | ● p. |
| 14 | 26.6 | ------ | 91 | 89 | 10 | 10 | 5.6 | ● a. ●° p. |
| 15 | 27.1 | ------ | 84 | 78 | 10 | 10 | 11.9 | d a. ● p. |
| 16 | 29.9 | 21.4 | 88 | 79 | 10 | 7 | ------ |  |
| 17 | 30.5 | 23.5 | 87 | 70 | 5 | 2 | ------ |  |
| 18 | 28.5 | 22 | 92 | 72 | 10 | 10 | 11.2 | ● a. |
| 19 | 30 | 23.8 | 86 | 73 | 10 | 9 | ------ |  |
| 20 | 31 | 23.2 | 89 | 72 | 5 | 4 | ------ |  |
| 21 | 30.1 | 24 | 91 | 78 | 10 | 8 | ------ |  |
| 22 | 29.4 | 23.4 | 87 | 72 | 10 | 10 | ------ |  |
| 23 | 30 | 23 | 87 | 76 | 10 | 5 | ------ |  |
| 24 | 30.5 | 22.6 | 84 | 80 | 7 | 3 | ------ |  |
| 25 | 29.1 | 22.1 | 81 | 80 | 1 | 4 | ------ |  |
| 26 | 29.4 | 22.9 | 85 | 81 | 8 | 9 | 2 | p a. ○ Γ p. |
| 27 | 29.6 | 25.5 | 88 | 82 | 10 | 9 | ------ | d p. |
| 28 | 30 | 25 | 83 | 74 | 9 | 9 | ------ |  |
| 29 | 30 | 23 | 88 | 78 | 9 | 10 | ------ |  |
| 30 | 30.8 | 22.8 | 84 | 75 | 9 | 10 | ------ | ⊤° p. |
| Mean | 29.5 | 23 | 88.4 | 77.2 | 8.1 | 7.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 68.2 |  |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.2 | 22.1 | 96 | 68 | 5 | 6 | 21.1 | ● ⊤ ϟ p. |
| 2 | 31.1 | 20.8 | 96 | 68 | 5 | 5 | ------ |  |
| 3 | 31.5 | 22.2 | 96 | 67 | 6 | 5 | ------ |  |
| 4 | 32.5 | 23 | 97 | 64 | 6 | 7 | ------ | ⊤ p. |
| 5 | 31.7 | 21.1 | 95 | 67 | 5 | 8 | ------ |  |
| 6 | 31.2 | 21.7 | 98 | 69 | 5 | 7 | 24.6 | ⊤ ●² p. |
| 7 | 31.2 | 21 | 97 | 70 | 5 | 6 | 27.2 | ●² ⊤² ϟ p. |
| 8 | 30.9 | 20.3 | 97 | 68 | 5 | 7 | ------ |  |
| 9 | 31.2 | 21.8 | 96 | 66 | 5 | 6 | ------ |  |
| 10 | 28.2 | 21.3 | 96 | 83 | 5 | 8 | ------ | ⊤ p. |
| 11 | 30 | 22.3 | 96 | 73 | 6 | 8 | 13.5 | ● ϟ p. |
| 12 | 30.1 | 21.8 | 97 | 74 | 6 | 8 | 6.9 | ● ⊤ p. |
| 13 | 30.2 | 21.5 | 96 | 75 | 5 | 6 | ------ |  |
| 14 | 32.2 | 22.2 | 97 | 77 | 5 | 9 | ------ | ⊤ p. |
| 15 | 31.5 | 22.3 | 96 | 62 | 5 | 5 | ------ |  |
| 16 | 30.6 | 22.3 | 97 | 71 | 7 | 8 | ------ |  |
| 17 | 31.2 | 22.5 | 97 | 69 | 7 | 6 | ------ |  |
| 18 | 31.7 | 22.8 | 97 | 85 | 5 | 6 | 8.6 | ● ⊤ p. |
| 19 | 30.7 | 22.6 | 97 | 80 | 7 | 8 | ------ |  |
| 20 | 31.2 | 23 | 96 | 74 | 6 | 5 | ------ |  |
| 21 | 32 | 23 | 97 | 71 | 5 | 7 | 123.7 | ●² ⊤² ϟ² p. |
| 22 | 29 | 21 | 97 | 73 | 9 | 8 | ------ | d a. |
| 23 | 31.6 | 22.8 | 98 | 68 | 5 | 6 | ------ |  |
| 24 | 31.7 | 22.7 | 97 | 65 | 5 | 6 | ------ |  |
| 25 | 31.5 | 22.2 | 97 | 70 | 5 | 6 | ------ |  |
| 26 | 31.7 | 22.8 | 97 | 65 | 5 | 7 | ------ |  |
| 27 | 31.9 | 22.7 | 95 | 68 | 5 | 6 | ------ |  |
| 28 | 31.2 | 22.7 | 96 | 63 | 5 | 6 | ------ |  |
| 29 | 32.1 | 20.6 | 94 | 67 | 6 | 5 | 17.8 | ⊕ ● p. |
| 30 | 31.8 | 21.5 | 95 | 74 | 6 | 7 | 11.4 | ● ⊤ ϟ p. |
| Mean | 31.2 | 22 | 96.4 | 70.5 | 5.6 | 6.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 254.8 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAGAYAN, MISAMIS.

[φ=8° 29′ N; λ=124° 38′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.9 | 22.7 | 92 | 69 | 8 | 9 | ------ | Ω² a. < p. |
| 2 | 32.3 | 22 | 91 | 68 | 3 | 3 | ------ | Ω² a. ψ p. |
| 3 | 32.1 | 22.6 | 89 | 67 | 4 | 7 | ------ | Ω² a. ☈ d° ψ p. |
| 4 | 32.6 | 23.2 | 93 | 65 | 3 | 7 | ------ | Ω a. < ψ p. |
| 5 | 31.6 | 22.5 | 89 | 59 | 6 | 6 | ------ | Ω² a. ☈ p. |
| 6 | 32.2 | 23.2 | 90 | 59 | 4 | 7 | 52.1 | ☈ a. ●² ☈² p. |
| 7 | 31 | 22 | 96 | 68 | 8 | 6 | 3.6 | Ω ≡° ☈ a. d p.. |
| 8 | 31.9 | 21.5 | 96 | 69 | 10 | 5 | 1.3 | Ω² a. ⌒² d ☈ p |
| 9 | 31.3 | 21.5 | 93 | 68 | 1 | 4 | ------ | Ω² a. ☈ p. |
| 10 | 31.6 | 21.9 | 90 | 65 | 4 | 8 | 36.1 | Ω° a. ● p. |
| 11 | 31.2 | 21.5 | 96 | 74 | 4 | 10 | 19.8 | Ω² ≡° a. ● p. |
| 12 | 31 | 21.7 | 95 | 77 | 8 | 8 | 52.3 | Ω² a. ●² ☈ p. |
| 13 | 30.9 | 21.4 | 95 | 86 | 7 | 10 | 40.6 | Ω ≡° a. ● p. |
| 14 | 29.7 | 22.2 | 96 | 90 | 4 | 10 | 34.3 | Ω ≡° a. ● a. p. |
| 15 | 28.9 | 22.5 | 97 | 93 | 10 | 10 | 26.5 | Ω ● a. p. < p. |
| 16 | 30.9 | 22.5 | 94 | 74 | 10 | 10 | .5 | Ω² a. d° < p. |
| 17 | 32.5 | 22 | 94 | 64 | 6 | 8 | ------ | Ω a. < p. |
| 18 | 32 | 23.3 | 87 | 91 | 10 | 10 | 2.3 | Ω² d a. d ☈ p. |
| 19 | 30.2 | 22 | 89 | 88 | 10 | 10 | 7.9 | Ω a. ● < p. |
| 20 | 32.4 | 22 | 93 | 61 | 8 | 7 | .5 | Ω a. ○ < p. |
| 21 | 31.7 | 23.1 | 93 | 68 | 8 | 7 | 3 | Ω a. < p. |
| 22 | 30.1 | 23.3 | 94 | 74 | 10 | 9 | 6.8 | d ○ a. |
| 23 | 29.6 | 22.9 | 96 | 76 | 10 | 8 | 34.3 | ≡° a. ● a. p. |
| 24 | 31.9 | 22.8 | 95 | 68 | 4 | 6 | ------ | Ω² a. < p. |
| 25 | 30.7 | 22.9 | 86 | 68 | 7 | 6 | ------ | Ω a. < p. |
| 26 | 32.2 | 22.5 | 93 | 68 | 5 | 7 | .5 | Ω a. d p. |
| 27 | 34.2 | 23 | 94 | 67 | 10 | 7 | ------ | Ω a. d° ☈ p. |
| 28 | 32.6 | 23.3 | 90 | 74 | 2 | 10 | ------ | Ω° a. ☈ p. |
| 29 | 33.1 | 21.5 | 88 | 60 | 7 | 7 | ------ | Ω a. ○° ψ < p. |
| 30 | 32.3 | 21.7 | 86 | 56 | 4 | 6 | ------ | Ω° a. ψ² p. |
| Mean | 31.6 | 22.4 | 92.3 | 71.1 | 6.5 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 322.4 | |

### BUTUAN.

[φ=8° 56′ N; λ=125° 32′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.1 | 23.9 | 89 | 60 | 7 | 7 | ------ | Ω a. ↙° T <² p. |
| 2 | 31 | 22.4 | 90 | 68 | 7 | 5 | ------ | Ω a. T < ⊖ p. |
| 3 | 31.3 | 24.1 | 92 | 66 | 5 | 7 | ------ | Ω ○² a. ○° T < p. |
| 4 | 31.1 | 23.6 | 94 | 68 | 5 | 8 | ------ | Ω a. T <² p. |
| 5 | 30.8 | 23.3 | 86 | 68 | 9 | 8 | ------ | Ω a. T a. p. |
| 6 | 30.6 | 23.3 | 91 | 66 | 8 | 9 | 4.1 | Ω a. < T ● p. |
| 7 | 29.3 | 22.4 | 95 | 82 | 10 | 9 | 1.3 | T a. p. ● < p. |
| 8 | 30 | 23.5 | 92 | 73 | 10 | 8 | ------ | ⌒ T < p° p. |
| 9 | 32.8 | 23.1 | 90 | 58 | 2 | 8 | ------ | Ω a. ☈ ⌒ ●° p. |
| 10 | 33.7 | 22.4 | 88 | 67 | 4 | 9 | 1.8 | Ω a. ☈ ●° p. |
| 11 | 30.5 | 23.1 | 91 | 64 | 6 | 8 | 8.9 | Ω² a. T ●° ⌒ < p. |
| 12 | 30.5 | 23.6 | 91 | 66 | 9 | 8 | .3 | ●° a. < T p. |
| 13 | 30.1 | 22.6 | 96 | 67 | 7 | 7 | 20.8 | ●° a. ○² ● p. |
| 14 | 30.6 | 22.7 | 97 | 63 | 7 | 7 | ------ | Ω² ⊕ a. < p. |
| 15 | 31.1 | 24.1 | 92 | 64 | 7 | 7 | ------ | Ω ○ a. ☈ p. |
| 16 | 31.8 | 23.9 | 92 | 67 | 5 | 7 | ------ | Ω a. ☈ d° p. |
| 17 | 32.6 | 23.7 | 88 | 59 | 9 | 7 | .5 | Ω a. ●° T < p. |
| 18 | 32 | 23.9 | 87 | 55 | 9 | 7 | 5.6 | Ω ○ a. d ☈ p. |
| 19 | 30.6 | 23.4 | 90 | 71 | 10 | 9 | ------ | Ω² a. ⊕ p. |
| 20 | 31.3 | 23.6 | 92 | 65 | 8 | 10 | ------ | Ω a. |
| 21 | 29.8 | 24.1 | 94 | 62 | 9 | 9 | 15 | Ω T d a. < p. |
| 22 | 28.5 | 23.4 | 96 | 74 | 10 | 9 | 10.2 | ☈ a. ● a. p. |
| 23 | 29.2 | 23.7 | 97 | 69 | 9 | 6 | 86.4 | ● a. < p. |
| 24 | 29.3 | 23.4 | 93 | 68 | 10 | 6 | 11.7 | ●² a. |
| 25 | 29.6 | 23.2 | 96 | 65 | 10 | 6 | ------ | ● a. |
| 26 | 30.7 | 24.2 | 92 | 58 | 10 | 6 | ------ | Ω ○ a. < p. |
| 27 | 32.1 | 24.4 | 91 | 77 | 10 | 9 | .3 | ⊕² a. ●ᶜ ⊕ ☈ p. |
| 28 | 32.1 | 23.6 | 89 | 64 | 8 | 10 | ------ | ⊕ a. p. ☈ p. |
| 29 | 31 | 24.1 | 90 | 61 | 10 | 8 | ------ | Ω² a. T p. |
| 30 | 32.3 | 23.7 | 85 | 56 | 6 | 10 | ------ | Ω a. ☈ p° p. |
| Mean | 31 | 23.5 | 91.5 | 65.7 | 7.9 | 7.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 166.9 | |

### DUMAGUETE.

[φ=9° 18′ N; λ=123° 19′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.8 | 22.9 | 86 | 61 | 10 | 10 | ------ | Ω a. ψ < p. |
| 2 | 32.2 | 23.2 | 85 | 76 | 10 | 8 | ------ | Ω a. ☈° p. |
| 3 | 32.3 | 22.5 | 86 | 73 | 10 | 10 | ------ | Ω ○° a. d < ψ° p. |
| 4 | 32 | 22.8 | 86 | 69 | 10 | 9 | ------ | Ω° a. T d < ψ p. |
| 5 | 32 | 23.3 | 83 | 72 | 10 | 9 | ------ | Ω ○° a. ☈ ψ° p. |
| 6 | 31.8 | 22.4 | 84 | 76 | 10 | 10 | ------ | Ω a. ☈ p. |
| 7 | 29.8 | 23.7 | 85 | 76 | 10 | 10 | 7.5 | ☈ d² a. ● < p. |
| 8 | 31.2 | 21.7 | 88 | 67 | 10 | 3 | ------ | Ω² a. < p. |
| 9 | 30.5 | 23 | 82 | 71 | 10 | 8 | ------ | ☈ p. |
| 10 | 31.5 | 24.2 | 85 | 67 | 10 | 4 | ------ | Ω d a. d² ☈ p. |
| 11 | 33.2 | 22.4 | 90 | 60 | 10 | 10 | ------ | Ω a. < p. |
| 12 | 31.5 | 23.1 | 81 | 65 | 10 | 10 | 13.4 | Ω a. ● <° ψ° p. |
| 13 | 31.5 | 22.2 | 91 | 89 | 10 | 10 | 26.9 | Ω² a. ● d ψ p. |
| 14 | 29.8 | 22.1 | 91 | 77 | 10 | 10 | 6.5 | Ω² a. ● a. p < p. |
| 15 | 30 | 23.6 | 89 | 75 | 10 | 10 | 3.8 | Ω² ●° a. d < p. |
| 16 | 29.8 | 23.6 | 94 | 76 | 10 | 10 | 4.8 | ●° ☈ a. < d p. |
| 17 | 33.3 | 23.8 | 84 | 55 | 10 | 10 | ------ | Ω² a. d p. |
| 18 | 31.8 | 24.2 | 77 | 64 | 10 | 10 | 3 | Ω ●° a. < p. |
| 19 | 30 | 24.4 | 81 | 75 | 10 | 10 | ------ | Ω° a. < p. |
| 20 | 31.1 | 22.7 | 82 | 72 | 8 | 10 | ------ | Ω a. < p. |
| 21 | 31.5 | 23.8 | 83 | 67 | 10 | 10 | ------ | Ω < a. < d p. |
| 22 | 28.5 | 24.3 | 92 | 82 | 10 | 10 | 2.5 | d² ● a. <° d p. |
| 23 | 30.7 | 23.8 | 84 | 76 | 10 | 10 | ------ | Ω ☈ d a. |
| 24 | 31 | 22.7 | 87 | 77 | 10 | 10 | 1 | Ω a. ●° < p. |
| 25 | 30.5 | ------ | 83 | 72 | 8 | 8 | ------ | ○² a. ○ <² p. |
| 26 | 30.8 | 22.3 | 86 | 73 | 10 | 10 | 1.3 | Ω ●° a. <° p. |
| 27 | 31.5 | 23.4 | 78 | 70 | 10 | 10 | 24.9 | Ω° a. ● a. p. |
| 28 | 34.3 | 23.9 | 77 | 50 | 10 | 10 | ------ | ○² a. < p. |
| 29 | 31.5 | 22.9 | 89 | 70 | 10 | 10 | ------ | Ω ○ a. ψ° p. |
| 30 | 31.5 | 22.8 | 78 | 71 | 10 | 10 | ------ | Ω° a. ○ a. p. |
| Mean | 31.4 | 23.2 | 84.9 | 70.8 | 9.9 | 9.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 95.6 | |

### YAP (WESTERN CAROLINES).

[φ=9° 29′ N; λ=138° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.4 | 24.4 | 92 | 66 | 4 | 2 | 13 | Ω a. d° ● ψ° p. |
| 2 | 31.5 | 24.2 | 92 | 75 | 8 | 8 | .5 | d a. ○° <° ψ° p. |
| 3 | 30.2 | 25.6 | 93 | 82 | 8 | 8 | 24.7 | T° a. ● d a. p. |
| 4 | 31.8 | 24.4 | 96 | 89 | 8 | 8 | 15 | ○° ●° a. ●² ψ p. |
| 5 | 31.5 | 23.4 | 97 | 75 | 1 | 3 | .5 | ●° <° p. |
| 6 | 31.7 | 24.1 | 94 | 84 | 2 | 6 | 14.7 | ●° a. ● ⌒° ψ ⊖° p. |
| 7 | 30.4 | 24 | 95 | 74 | 10 | 9 | 9.7 | d° a. ● a. p. ○ ψ |
| 8 | 31.7 | 23.1 | 98 | 77 | 8 | 6 | 3.8 | ●° ⌒² a. p. ψ° p. |
| 9 | 31 | 24.4 | 96 | 79 | 6 | 6 | 17.3 | ● a. ●° <° ψ p. |
| 10 | 30.4 | 24.3 | 91 | 80 | 9 | 8 | 43.5 | ● a. p. |
| 11 | 32.3 | 24.1 | 87 | 72 | 2 | 4 | .8 | ●² a. ⌒° d² p. |
| 12 | 31.3 | 24.4 | 88 | 79 | 7 | 9 | 3 | d ○ a. p. ⌒° ● p. |
| 13 | 30.8 | 24.8 | 92 | 80 | 4 | 8 | 5.6 | ○° a. ● a. p. ○ p. |
| 14 | 28 | 24.7 | 93 | 86 | 9 | 9 | 15.5 | ●° d° a. ● p. |
| 15 | 27.8 | 24.4 | 92 | 84 | 10 | 10 | 4.6 | T° p² a. ●° a. p. <° |
| 16 | 30 | 25.1 | 90 | 82 | 8 | 10 | 2.3 | <² p. |
| 17 | 26.5 | ------ | 93 | 97 | 10 | 10 | 48.8 | ☈ ● a. p. |
| 18 | 29.6 | ------ | 92 | 77 | 8 | 6 | 3.3 | ●° a. p. |
| 19 | 30.8 | 24.1 | 93 | 79 | 4 | 6 | .2 | d° p. |
| 20 | 29.8 | 23.3 | 88 | 98 | 8 | 10 | 8.6 | ● d p. |
| 21 | 30.5 | 23 | 94 | 71 | 8 | 6 | .5 | ○° a. ○² ● p. |
| 22 | 31 | 23.8 | 95 | 75 | 6 | 4 | 3.8 | ● p. |
| 23 | 31.4 | 24.3 | 97 | 74 | 4 | 4 | 5.4 | ● a. ⌒° d° p. |
| 24 | 31 | 24 | 92 | 74 | 4 | 6 | ------ | ● a. <° p. |
| 25 | 31.7 | 25 | 93 | 75 | 7 | 6 | .2 | Ω a. < d° p. |
| 26 | 31.8 | 24 | 96 | 85 | 10 | 4 | 2.5 | ●° a. p. ⌒° <° p. |
| 27 | 32.6 | 23.9 | 96 | 66 | 8 | 5 | 6.6 | ● a ψ° p. |
| 28 | 31.4 | 25 | 90 | 75 | 8 | 8 | 4.1 | Ω ●° ○ a. ψ° p. |
| 29 | 32.3 | 24.6 | 93 | 79 | 7 | 10 | .5 | d° a. p. <° p. |
| 30 | 31.1 | 24.4 | 92 | 74 | 6 | 4 | 1.8 | ● ⌒ᶜ a. p. ⊕° <° p. |
| Mean | 30.8 | 24.2 | 93 | 78.8 | 6.7 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 260.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 33.9 | 24.9 | 85 | 61 | 3 | 1 | ------ | Ω a. ⊤ p. |
| 2 | 33.8 | 23.1 | 87 | 59 | 3 | 1 | 27.9 | Ω° a. ζ² p. |
| 3 | 31.6 | 23 | 94 | 65 | 8 | 6 | ------ | ●² ζ a. ⊤ ζ² p. |
| 4 | 32.2 | 24 | 89 | 65 | 6 | 6 | 1.3 | ⛈ a. ⊎ p. |
| 5 | 30 | 24.6 | 93 | 84 | 10 | 5 | ------ | ζ² d ⛈ a. |
| 6 | 32.5 | 24.2 | 88 | 65 | 10 | 9 | ------ | Ω a. ζ² p. |
| 7 | 30.5 | 23 | 87 | 67 | 9 | 2 | ------ | ζ² a. Ω° p. |
| 8 | 30.5 | 22.7 | 89 | 68 | 6 | 5 | ------ | Ω° a. p. |
| 9 | 32.1 | 22.9 | 95 | 74 | 2 | 2 | ------ | Ω a. ∞ p. |
| 10 | 31.2 | 23.5 | 92 | 89 | 4 | 10 | 2.3 | Ω d a. p. |
| 11 | 31.2 | 23 | 87 | 72 | 8 | 6 | 3.3 | Ω² a. ●° p. |
| 12 | 31.2 | 24.1 | 94 | 65 | 10 | 9 | 56.9 | Ω° a. ζ² ●² p. |
| 13 | 30.2 | 22.8 | 95 | 73 | 10 | 9 | 28.5 | d° ●° a. |
| 14 | 30.3 | 24.2 | 94 | ------ | 10 | ------ | 2.3 | ●² a. ⛈° ●° p. |
| 15 | 31.1 | 25.2 | 82 | 68 | 10 | 8 | ------ | ζ° p. |
| 16 | 32.1 | 26.4 | 73 | 68 | 8 | 9 | ------ | ζ d° p. |
| 17 | 33 | 26.3 | 78 | 62 | 10 | 9 | ------ | ζ p. |
| 18 | 33.4 | 24.3 | 92 | 56 | 7 | 7 | ------ | ζ p. |
| 19 | 32.6 | 24.5 | 92 | 59 | 10 | 9 | ------ | ζ° p. |
| 20 | 31.2 | 23.6 | 96 | 70 | 10 | 10 | 3.6 | ○ a. p. |
| 21 | 31.2 | 23.3 | 96 | 70 | 10 | 7 | 33.2 | d a. ⛈ ● a. p. |
| 22 | 30.1 | 22.8 | 92 | 72 | 10 | 6 | 6.1 | ● a. p. d° p. |
| 23 | 30.2 | 23.2 | 96 | 67 | 10 | 4 | 54.4 | ●° a. d° ζ° ●² p. |
| 24 | 30.8 | 23 | 97 | 69 | 10 | 6 | 1.1 | d° p a. ⛈ d² p. |
| 25 | 30.6 | 23.2 | 94 | 69 | 4 | 5 | .4 | d a. ζ° p. |
| 26 | 31.4 | 25.4 | 82 | 63 | 9 | 9 | ------ | d a. ○° p. |
| 27 | 33 | 26.6 | 78 | 57 | 10 | 9 | ------ | ○ a. p. ζ p. |
| 28 | 33.9 | 24.6 | 91 | 60 | 9 | 10 | ------ | ○ a. p. ζ° p. |
| 29 | 32.3 | 24.5 | 93 | 69 | 10 | 9 | ------ | d° a. |
| 30 | 32.6 | 22.6 | 93 | 63 | 6 | 9 | ------ | Ω° a. ⊎° p. |
| Mean | 31.7 | 24 | 89.8 | 67.2 | 8.1 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 221.3 | |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 24.4 | 90 | 88 | 10 | 4 | ------ | |
| 2 | 31.6 | 24.3 | 85 | 78 | 10 | 8 | ------ | |
| 3 | 32 | 24.4 | 90 | 79 | 10 | 8 | ------ | d a. ⛈ a. p. ⊎² |
| 4 | 32 | 23.3 | 91 | 74 | 10 | 7 | ------ | |
| 5 | 32 | 23.4 | 90 | 83 | 10 | 10 | 13.2 | ⊤² ● a. |
| 6 | 32 | 23.8 | 87 | 79 | 10 | 10 | 22.4 | ⊤² a. ζ ⊎ ● p. |
| 7 | 30.8 | 21.4 | 95 | 89 | 10 | 10 | ------ | d° a. ⌐d ⊤° ⊎² p. |
| 8 | 30.9 | 21.4 | 89 | 85 | 10 | 7 | ------ | ⊎² p. |
| 9 | 31 | 21.6 | 91 | 83 | 5 | 4 | ------ | |
| 10 | 30.9 | 21.4 | 90 | 87 | 10 | 10 | 49.3 | d° ●² a. d ζ p. |
| 11 | 31 | 21.4 | 94 | 83 | 10 | 10 | 15.2 | d² ⊤² p. |
| 12 | 29.9 | 21.3 | 90 | 86 | 10 | 10 | 8.1 | d ⊤² a. d² ⛈ p. |
| 13 | 30.9 | 21.4 | 92 | 82 | 10 | 10 | 42.2 | d° ● ⊤ a. p² p. |
| 14 | 30 | 21.2 | 93 | 96 | 10 | 10 | 57.5 | ●² a. ● p. |
| 15 | 30 | 21.3 | 89 | 90 | 10 | 10 | 13 | ● a. d ζ p. |
| 16 | 30 | 21.2 | 90 | 86 | 10 | 10 | 27.9 | ↙° ● a. |
| 17 | 29.6 | 23.3 | 93 | 81 | 10 | 10 | ------ | ζ p. |
| 18 | 30 | 24.7 | 84 | 82 | 10 | 10 | 22.4 | ● p. |
| 19 | 30.3 | 23.7 | 91 | 81 | 10 | 10 | ------ | |
| 20 | 30.2 | 23.8 | 93 | 83 | 10 | 10 | 16.8 | ● p. |
| 21 | 30.2 | 23.8 | 95 | 84 | 10 | 10 | 43.2 | d ⊤ a. p. ζ ↙° ● |
| 22 | 30.1 | 21.8 | 93 | 83 | 10 | 8 | ------ | |
| 23 | 30.5 | 21.8 | 91 | 86 | 10 | 10 | 15.2 | ● ζ p. |
| 24 | 31 | 22 | 95 | 80 | 10 | 7 | 20.1 | |
| 25 | 31 | 22 | 93 | 77 | 10 | 5 | ------ | ● a. |
| 26 | 30 | 22.2 | 93 | 81 | 10 | 10 | ------ | ↙° p. |
| 27 | 30 | 22.2 | 87 | 80 | 10 | 10 | ------ | ⊎ ζ p. |
| 28 | 31 | 22.2 | 87 | 80 | 10 | 10 | ------ | ⊕² ⊎ p. |
| 29 | 31 | 22.4 | 92 | 82 | 10 | 10 | ------ | |
| 30 | 31 | 23.8 | 90 | 78 | 10 | 10 | ------ | ⊕² ⊎ p. |
| Mean | 30.8 | 22.6 | 90.8 | 82.9 | 9.8 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 366.5 | |

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.9 | 25 | 93 | 79 | 10 | 10 | 2.5 | ● a. p. |
| 2 | 31.9 | 22.6 | 91 | 72 | 5 | 7 | 2.8 | ● p. |
| 3 | 30.8 | 22.9 | 90 | 75 | 1 | 8 | 2.1 | ●° a. |
| 4 | 31.9 | 22.5 | 91 | 72 | 6 | 6 | ------ | ζ ● a. d p. |
| 5 | 32.8 | 23.2 | 87 | 70 | 10 | 4 | .5 | ⊤ ●° ⌒ ζ p. |
| 6 | 32.4 | 23 | 90 | 72 | 5 | 8 | 3 | ζ p. |
| 7 | 30.9 | 22.6 | 91 | 78 | 6 | 10 | 14.2 | ● ⊤ a. p. ζ p. |
| 8 | 30.9 | 22.7 | 95 | 79 | 10 | 10 | .5 | ⊤ ● ζ p. |
| 9 | 32.2 | 22 | 92 | 70 | 7 | 9 | 2.3 | ● ⊤ p. |
| 10 | 31.7 | 22.8 | 88 | 94 | 3 | 10 | 8.9 | ⊤ a. p. ● d p. |
| 11 | 31.9 | 22.5 | 92 | 77 | 10 | 10 | 8.4 | d a. ● ⛈ p. |
| 12 | 31.2 | 22.4 | 91 | 81 | 8 | 10 | 6.1 | d² a. d ● p. |
| 13 | 32.3 | 22.5 | 95 | 92 | 6 | 10 | 11.7 | ● ζ p. |
| 14 | 32.1 | 22.2 | 94 | 74 | 4 | 9 | 1.8 | ● p. |
| 15 | 31.8 | 22.6 | 92 | 82 | 10 | 8 | 10.2 | d ● ζ p. |
| 16 | 30.9 | 24.4 | 95 | 78 | 10 | 10 | 16 | ● a. p. ζ p. |
| 17 | 31.3 | 24.8 | 87 | 85 | 10 | 10 | 38.6 | ● a. p. ⊤ ζ p. |
| 18 | 27.8 | 23 | 92 | 90 | 10 | 10 | 15.3 | ⛈ ● a. ζ ● p. |
| 19 | 29.3 | 23.5 | 96 | 86 | 10 | 10 | 5.9 | ● ⛈ a. ● ζ ⊤ |
| 20 | 31.4 | 23.1 | 97 | 80 | 10 | 9 | ------ | ● d² ⌒ a. |
| 21 | 32.4 | 23.6 | 92 | 75 | 10 | 9 | 11.2 | Ω² a. ζ ● p. |
| 22 | 30.8 | 22.9 | 95 | 81 | 10 | 10 | 12 | ●° a. ● p. |
| 23 | 31.3 | 22.8 | 92 | 76 | 9 | 7 | 21.8 | ●² p. |
| 24 | 29.9 | 23.1 | 90 | 81 | 10 | 8 | 1.8 | ● a. |
| 25 | 31.4 | 22.5 | 91 | 72 | 0 | 4 | 5.6 | Ω² a. ζ p. |
| 26 | 31.4 | 23.1 | 94 | 84 | 10 | 10 | 29.2 | ⌒ ●² a. d² ● ζ p. |
| 27 | 31.7 | 25.1 | 85 | 79 | 9 | 10 | 2.8 | ●° a. ● p. |
| 28 | 27.3 | 24.4 | 92 | 96 | 10 | 10 | 65 | ζ ● a. ⊤ ●² ζ p. |
| 29 | 31.8 | 22.6 | 96 | 81 | 8 | 10 | ------ | d° ζ p. |
| 30 | 32.7 | 23.6 | 92 | 76 | 10 | 10 | ------ | d² a. p. ○ ⊤ p. |
| Mean | 31.3 | 23.1 | 91.9 | 79.6 | 7.9 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 300.2 | |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 26.6 | 87 | 67 | 10 | 8 | 1 | ⊤ ●° a. |
| 2 | 32.1 | 24 | 97 | 71 | 8 | 5 | ------ | Ω² ≡ a. |
| 3 | 32.3 | 24.6 | 95 | 70 | 7 | 4 | ------ | Ω ≡° a. |
| 4 | 32.1 | 24.5 | 90 | 69 | 10 | 9 | 8.9 | Ω a. ⌒ ⛈ p. |
| 5 | 32.6 | 24.6 | 90 | 70 | 9 | 7 | ------ | ● a. |
| 6 | 32.2 | 24.3 | 97 | 69 | 9 | 7 | 8.6 | Ω² ≡ a. ⛈ ● p. |
| 7 | 27.6 | 23.7 | 87 | 96 | 10 | 10 | 81.6 | d² a. ⛈ ●² a. p. |
| 8 | 30.1 | 23 | 92 | 74 | 10 | 9 | 7.1 | |
| 9 | 31.6 | 24.5 | 91 | 73 | 8 | 7 | ------ | ● ⛈ a. ⌒ p. |
| 10 | 30.9 | 24.3 | 93 | 82 | 9 | 10 | 2.8 | Ω ●° a. |
| 11 | 29.3 | 24.3 | 98 | 90 | 9 | 9 | 20.9 | ● a. ●° p. |
| 12 | 30.6 | 23.6 | 97 | 92 | 10 | 10 | 24.1 | p a. ●² p. |
| 13 | 28.1 | 23.7 | 97 | 97 | 9 | 10 | 71.1 | ●² p. |
| 14 | 31.4 | 24 | 97 | 75 | 9 | 7 | ------ | |
| 15 | 32 | 25.6 | 86 | 75 | 9 | 8 | 12.2 | ζ ● p. |
| 16 | 31.1 | 24.3 | 87 | 75 | 9 | 8 | ------ | d ○ p. |
| 17 | 31 | 26.6 | 88 | 76 | 7 | 8 | 43.2 | d° a. ●² ⛈ p. |
| 18 | 26.8 | 24.7 | 98 | 93 | 10 | 10 | 107.7 | ⛈ a. ●² a. p. |
| 19 | 30.7 | 24.1 | 91 | 77 | 10 | 10 | 20.6 | ● ζ p. |
| 20 | 30.6 | 23.4 | 97 | 80 | 10 | 9 | 4.8 | d° a. ● a. p. |
| 21 | 31.7 | 23.9 | 97 | 72 | 9 | 9 | 2.3 | |
| 22 | 29.6 | 24.4 | 97 | 83 | 10 | 9 | 26.7 | ● a. p. |
| 23 | 31.8 | 23.4 | 96 | 72 | 9 | 8 | ------ | ζ p. |
| 24 | 30.6 | 23.7 | 97 | 75 | 10 | 8 | 11.7 | ● a. |
| 25 | 32.1 | 23.9 | 97 | 69 | 8 | 7 | 2.3 | Ω ≡ a. ζ ●° p. |
| 26 | 31.2 | 25.5 | 88 | 77 | 8 | 9 | ------ | |
| 27 | 32.2 | 27 | 82 | 72 | 9 | 9 | 15.5 | ○ ● p. |
| 28 | 29 | 25.2 | 87 | 81 | 9 | 9 | 16.7 | ● a. p. |
| 29 | 31.6 | 25.3 | 93 | 75 | 9 | 8 | 2.3 | ●° ζ p. |
| 30 | 32.6 | 25.5 | 91 | 72 | 10 | 9 | 1 | ●° p. |
| Mean | 30.9 | 24.5 | 92.7 | 77.3 | 9.1 | 8.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 493.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### GUIUAN.

[φ=11° 03′ N; λ=125° 43′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.9 | 27.1 | 92 | 80 | 2 | 1 | 5.3 | ●° p. |
| 2 | 31.1 | 24.5 | 99 | 87 | 7 | 2 | ------ | ⊤ p. |
| 3 | 31.4 | 23.8 | 88? | 83 | 3 | 4 | ------ | ϟ$^2$ ⊤ p. |
| 4 | 31.5 | 24.3 | 88 | 76 | 6 | 8 | ------ | ◯$^2$ ψ p. |
| 5 | 31.4 | 23.4 | 99 | 79 | 6 | 3 | ------ | Ω$^2$≡°a. ⊤$^2$ ϟ$^2$p. |
| 6 | 31.6 | 23.5 | 99 | 78 | 9 | 8 | 7.4 | Ω° d°a. ⊤$^2$ ϟ$^2$p. |
| 7 | 30.6 | 22.3 | 97 | 82 | 9 | 8 | 1.6 | ⊤ ● a. d° ϟ° p. |
| 8 | 30.9 | 22.3 | 97 | 69 | 7 | 3 | ------ | Ω° a. ϟ$^2$ p. |
| 9 | 31.9 | 21.8 | 99 | 65 | 2 | 1 | ------ | Ω$^2$ ≡° a. ϟ$^2$ p. |
| 10 | 31.4 | 22.6 | 98 | 69 | 2 | 3 | ------ | Ω$^2$ ≡° a. ϟ° p. |
| 11 | 32.6 | 22.8 | 99 | 73 | 7 | 7 | ------ | Ω$^2$ a. ϟ° p. |
| 12 | 32.2 | 22.7 | 93? | 73 | 7 | 8 | ------ | |
| 13 | 31.3 | 22 | 99 | 79 | 7 | 8 | 12.4 | ●° p. |
| 14 | 31.3 | 22.8 | 92 | 76 | 8 | 7 | .2 | ●° ϟ$^2$ p. |
| 15 | 29.7 | 26.4 | 80 | 76 | 9 | 9 | ------ | ◯° ϟ$^2$ p. |
| 16 | 29.9 | 27.3 | 80 | 91 | 7 | 9 | ------ | p° ϟ$^2$ p. |
| 17 | 30.8 | 26.2 | 76 | 79 | 8 | 6 | ------ | ϟ$^2$ p. |
| 18 | 30.7 | 27.5 | 81 | 81 | 9 | 9 | ------ | |
| 19 | 31.3 | 24.3 | 90 | 77 | 9 | 5 | ------ | ϟ° p. |
| 20 | 30.2 | 27 | 84 | 76 | 8 | 10 | 8.4 | ϟ° p. |
| 21 | 30.3 | 23.8 | 97 | 83 | 9 | 7 | 10.4 | ⊤$^2$●°a. ⊏$^2$●p. |
| 22 | 29.9 | 23.4 | 88 | 76 | 10 | 8 | 6.4 | d ●° a. ϟ° p. |
| 23 | 31.2 | 22.3 | 98 | 72 | 6 | 4 | ------ | ϟ° ⊤ p. |
| 24 | 31.1 | 21.9 | 98 | 85 | 1 | 9 | 6.4 | ●° ϟ$^2$ p. |
| 25 | 31.2 | 22.4? | 88 | 88 | 3 | 9 | .1 | ⊏ d° p. |
| 26 | 30.1 | 24.7 | 79 | 84 | 9 | 9 | ------ | ◯° p. |
| 27 | 30.2 | 27.5 | 84 | 76 | 9 | 7 | ------ | ↙°◯$^2$a. ◯° ϟ$^2$p. |
| 28 | 31.7 | 27.5 | 83 | 76 | 9 | 9 | ------ | ◯° ϟ ψ$^2$ p. |
| 29 | 31.2 | 27.3 | 83 | 71 | 9 | 8 | ------ | ◯° a. p. |
| 30 | 32.2 | 26.6 | 90 | 73 | 8 | 8 | ------ | Ω° a. ψ$^2$ p. |
| Mean | 31.1 | 24.4 | 90.6 | 77.8 | 6.8 | 6.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 58.6 | |

### BORONGAN.

[φ=11° 37′ N; λ=125° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 36 | 22.5 | 96 | 46 | 1 | 4 | ------ | Ω ≡° a. ψ p. |
| 2 | 34.6 | 22.8 | 96 | 64 | 3 | 5 | ------ | Ω ≡°a. ◯° ψ ϟ p. |
| 3 | 33.2 | 21.4 | 96 | 69 | 3 | 6 | ------ | Ω ≡°a. ⊤ ϟ ψ p. |
| 4 | 35 | 22 | 96 | 66 | 4 | 5 | 0.8 | Ω ≡°a. ● ⊤ ϟ p. |
| 5 | 32.4 | 22.6 | 97 | 63 | 4 | 4 | .5 | Ω ≡ a. ⊤$^2$●° ϟ p. |
| 6 | 31.5 | 22.6 | 97 | 80 | 5 | 7 | 8.1 | Ω ≡ a. ⊤ ● ϟ p. |
| 7 | 31 | 23 | 97 | 81 | 6 | 8 | 10.4 | ≡ ●° a. ⊤ ● a. p. |
| 8 | 30.6 | 22.3 | 97 | 66 | 4 | 5 | ------ | ≡ a. ϟ d ψ p. |
| 9 | 31 | 21.8 | 96 | 65 | 3 | 4 | 5.8 | Ω ≡° a. ϟ p. |
| 10 | 31.8 | 22.7 | 96 | 67 | 3 | 4 | ------ | ● ≡° a. |
| 11 | 31.7 | 22 | 95 | 65 | 3 | 5 | ------ | Ω ≡° a. ϟ p. |
| 12 | 31.8 | 22.2 | 92 | 67 | 5 | 5 | 1.3 | Ω a. ● ϟ p. |
| 13 | 32 | 22.6 | 97 | 63 | 2 | 5 | 3.3 | Ω ≡ a. ◯°● ϟ p. |
| 14 | 33.6 | 22.5 | 97 | 65 | 4 | 7 | 1.3 | Ω ≡ ◯ a. ● ϟ p. |
| 15 | 33 | 23 | 95 | 66 | 7 | 7 | .8 | ≡° a. d ● ϟ p. |
| 16 | 32 | 22.2 | 95 | 75 | 4 | 8 | 14.5 | ≡° a. ● ⊤ p. |
| 17 | 33.1 | 23.2 | 97 | 63 | 5 | 5 | ------ | d ϟ p. |
| 18 | 32.1 | 23.5 | 97 | 65 | 6 | 7 | 1.3 | Ω ≡ a. ● ⊤ ϟ p. |
| 19 | 33.6 | 23.5 | 97 | 56 | 7 | 6 | ------ | ≡ a. ϟ ⊤ d p. |
| 20 | 31 | 24 | 97 | 70 | 7 | 7 | 1.5 | ≡ a. ⊏ ●° p. |
| 21 | 30.5 | 24.4 | 97 | 79 | 6 | 9 | 24.4 | ⊤ ● a. p. ⊏° p. |
| 22 | 29.9 | 22.4 | 97 | 73 | 7 | 7 | 5.6 | ≡ a. ● p. |
| 23 | 31.2 | 22.2 | 97 | 83 | 4 | 8 | 11.4 | ≡° a. ● d p. |
| 24 | 31 | 22 | 96 | 86 | 3 | 7 | 5.9 | Ω ≡° a. ● a. p. |
| 25 | 33 | 21.8 | 96 | 75 | 4 | 7 | 2.8 | Ω ≡° a. ●° ϟ p. |
| 26 | 32.6 | 25 | 85 | 69 | 8 | 7 | ------ | d a. ⊕° ϟ p. |
| 27 | 33 | 23.3 | 83 | 57 | 6 | 5 | ------ | ϟ p. |
| 28 | 33.5 | 22 | 95 | 59 | 3 | 5 | ------ | Ω ≡° a. ψ ϟ p. |
| 29 | 32.5 | 23 | 95 | 56 | 4 | 5 | ------ | Ω ≡°◯° a. ψ ϟ p. |
| 30 | 31.9 | 22 | 96 | 83 | 3 | 10 | 22.1 | Ω a. ● ⊏ ψ° p. |
| Mean | 32.3 | 22.7 | 95.3 | 68.1 | 4.5 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 121.8 | |

### MASBATE.

[φ=12° 22′ N; λ=123° 36′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.2 | 25.8 | 93 | 75 | 9 | 8 | ------ | |
| 2 | 31 | 25 | 98 | 73 | 8 | 5 | ------ | |
| 3 | 30.8 | 25.6 | 89 | 74 | 6 | 9 | ------ | |
| 4 | 31 | 26.5 | 90 | 72 | 10 | 9 | ------ | |
| 5 | 30.5 | 26.5 | 87 | 88 | 9 | 9 | 13 | |
| 6 | 30.5 | 26.6 | 92 | 89 | 10 | 9 | 3.8 | |
| 7 | 29.8 | 21.8 | 95 | 80 | 10 | 8 | 12.2 | |
| 8 | 31 | 23.5 | 96 | 70 | 9 | 3 | ------ | |
| 9 | 30.8 | 24.6 | 96 | 82 | 6 | 9 | ------ | |
| 10 | 32 | 25.4 | 95 | 78 | 7 | 8 | ------ | |
| 11 | 31 | 25 | 97 | 83 | 8 | 7 | ------ | |
| 12 | 32.5 | 25.2 | 98 | 84 | 8 | 7 | ------ | |
| 13 | 31.6 | 24.5 | 97 | 72 | 6 | 8 | 15 | |
| 14 | 30.8 | 24.5 | 97 | 81 | 8 | 9 | ------ | |
| 15 | 30.6 | 24.6 | 97 | 77 | 10 | 10 | ------ | |
| 16 | 30.4 | 26.8 | 90 | 88 | 10 | 8 | .3 | |
| 17 | 30.4 | 26 | 95 | 76 | 10 | 10 | .5 | |
| 18 | 30.2 | 25.5 | 92 | 90 | 10 | 10 | 5.1 | |
| 19 | 29 | 25 | 91 | 85 | 10 | 10 | ------ | |
| 20 | 31.5 | 25.4 | 95 | 80 | 10 | 10 | ------ | |
| 21 | 30.5 | 24.6 | 96 | 84 | 6 | 10 | 38.8 | |
| 22 | 29.8 | 23.5 | 97 | 82 | 10 | 9 | 7.4 | |
| 23 | 30.2 | 24.6 | 98 | 81 | 9 | 9 | .5 | |
| 24 | 30.4 | 24.6 | 97 | 88 | 8 | 8 | 1 | |
| 25 | 30.5 | 25.2 | 92 | 74 | 4 | 9 | ------ | |
| 26 | 29.8 | 26.8 | 92 | 83 | 10 | 10 | ------ | |
| 27 | 30.5 | 27 | 90 | 85 | 9 | 10 | 8.9 | |
| 28 | 27.6 | 25.6 | 94 | 89 | 10 | 10 | ------ | |
| 29 | 31 | 25.2 | 93 | 77 | 10 | 10 | ------ | |
| 30 | 31 | 25.2 | 98 | 80 | 10 | 10 | ------ | |
| Mean | 30.6 | 25.2 | 94.2 | 80.7 | 8.7 | 8.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 106.5 | |

### ROMBLON.

[φ=12° 35′ N; λ=122° 16′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 33.4 | 26 | 84 | 64 | 8 | 7 | ------ | |
| 2 | 33.9 | 24.2 | 86 | 65 | 4 | 3 | ------ | |
| 3 | 34.8 | 24.1 | 82 | 62 | 6 | 4 | ------ | |
| 4 | 34.2 | 23.7 | 83 | 65 | 4 | 7 | ------ | ϟ p. |
| 5 | 34.3 | 24.5 | 85 | 61 | 8 | 4 | ------ | ϟ p. |
| 6 | 34.3 | 23.4 | 95 | 63 | 3 | 7 | ------ | Ω a. |
| 7 | 32.6 | 23.7 | 97 | 69 | 9 | 8 | ------ | Ω ⊤ a. ϟ Φ ψ p. |
| 8 | 34.1 | 23.3 | 92 | 55 | 7 | 3 | ------ | Ω° a. ϟ p. |
| 9 | 34.7 | 23.8 | 87 | 61 | 7 | 3 | 2.7 | Ω a. ● ϟ p. |
| 10 | 34.4 | 24.9 | 88 | 63 | 7 | 4 | 2.5 | |
| 11 | 33 | 24.4 | 97 | 75 | 9 | 8 | 3.8 | ●° ⊏ a. ϟ p. |
| 12 | 32.4 | 23.8 | 95 | 75 | 10 | 7 | 36 | ⊏ ● a. p. |
| 13 | 33.2 | 22.7 | 98 | 66 | 7 | 6 | ------ | ⊏ p. |
| 14 | 32.5 | 22.8 | 96 | 68 | 8 | 7 | ------ | d° a. |
| 15 | 33 | 22.8 | 97 | 70 | 9 | 8 | ------ | ϟ p. |
| 16 | 33.7 | 25.7 | 81 | 72 | 9 | 9 | 3 | ● a. ϟ p. |
| 17 | 31.5 | 25.4 | 82 | 90 | 10 | 10 | 21.6 | ⊤ ●° a. ● ⊏ p. |
| 18 | 29.4 | 24 | 91 | 92 | 10 | 10 | 15.3 | ↙$^c$ d a. ● a. p. |
| 19 | 28.4 | 23.2 | 85 | 85 | 9 | 10 | 19.7 | ●° a. ● ϟ p. |
| 20 | 32.9 | 23.6 | 93 | 63 | 9 | 6 | ------ | ●° a. ϟ p. |
| 21 | 33.9 | 24.3 | 85 | 68 | 8 | 8 | 1.8 | ●° ϟ p. |
| 22 | 31.6 | 23.4 | 97 | 71 | 9 | 8 | .3 | d a. p. |
| 23 | 33.1 | 23 | 97 | 68 | 9 | 6 | ------ | Ω a. ϟ p. |
| 24 | 33 | 22.2 | 97 | 64 | 8 | 7 | ------ | Ω$^2$ a. |
| 25 | 32.6 | 23.6 | 95 | 65 | 6 | 4 | ------ | |
| 26 | 34 | 24.1 | 92 | 69 | 8 | 8 | ------ | Ω a. |
| 27 | 31.7 | 25.6 | 85 | 81 | 10 | 10 | 1.5 | ⊤ ↙$^c$ p. |
| 28 | 29.6 | 24.7 | 81 | 93 | 8 | 10 | 56.6 | ● a. p. ●$^2$ p. |
| 29 | 31.3 | 23.3 | 85 | 69 | 10 | 8 | 10.4 | ⊏ ● a. p. |
| 30 | 33.2 | 23.2 | 82 | 68 | 9 | 8 | .3 | ⊤ a. d ϟ p. |
| Mean | 32.8 | 23.9 | 89.7 | 70 | 7.9 | 6.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 175.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | ------ | ------ | ------ | 9 | 6 | ------ | |
| 2 | ------ | ------ | ------ | ------ | 3 | 7 | ------ | ⌓ a. ⊖ ⩛ p. |
| 3 | ------ | ------ | ------ | ------ | 4 | 8 | ------ | ⌓ a. ↯ p. |
| 4 | ------ | ------ | ------ | ------ | 8 | 9 | ------ | ⌓ a. ⊤ p. |
| 5 | ------ | ------ | ------ | ------ | 7 | 7 | 0.4 | ⌓ a. Γ↯ p. |
| 6 | ------ | ------ | ------ | ------ | 9 | 8 | 4.3 | ●° a. ⊤ ↯ p. |
| 7 | ------ | ------ | ------ | ------ | 9 | 3 | 1.3 | ● a. ↯ ●° p. |
| 8 | ------ | ------ | ------ | ------ | 6 | 2 | ------ | ↯ p. |
| 9 | ------ | ------ | ------ | ------ | 4 | 4 | ------ | ⌓ d a. |
| 10 | ------ | ------ | ------ | ------ | 4 | 7 | 1 | ⌓ p a. ◯° ⩛ p. |
| 11 | ------ | ------ | ------ | ------ | 8 | 5 | ------ | ⌓ a. ↯ p. |
| 12 | 32.3 | 23.1 | 96 | 67 | 3 | 6 | ------ | ⌓ d a. ↯ p. |
| 13 | 32.9 | 22.6 | 97 | 66 | 3 | 8 | 1.5 | ⌓ a. ◯ ↯ ●° p. |
| 14 | 32.1 | 23.3 | 97 | 72 | 9 | 9 | 2 | p a. p. ◯ ↯ p. |
| 15 | 30.7 | 24.5 | 91 | 71 | 9 | 9 | ------ | ◯ ↯ p. |
| 16 | 31.2 | 24.2 | 93 | 65 | 9 | 8 | ------ | ⌓ ◌ a. d p. |
| 17 | 32.1 | 25.2 | 89 | 67 | 9 | 9 | ------ | ⌓ a. ↯ p. |
| 18 | 31.9 | 24.6 | 95 | 71 | 9 | 9 | ------ | d ↯ p. |
| 19 | 32.8 | 23.5 | 98 | 66 | 10 | 9 | ------ | ⌓ a. d ↯ p. |
| 20 | 32.7 | 24.4 | 98 | 76 | 9 | 10 | ------ | ⌓ a. ↯ d p. |
| 21 | 33.9 | 24.9 | 99 | 71 | 7 | 8 | 21.8 | ⌒ ◯° a. ↯ ● p. |
| 22 | 33.2 | 23.1 | 98 | 78 | 8 | 8 | .2 | ◯ ↯ ● p. |
| 23 | 31.2 | 22.9 | 99 | 72 | 4 | 5 | 9.9 | ●° p. |
| 24 | 31.9 | 23.2 | 97 | 83 | 5 | 8 | 6.6 | ● ⌒ a. |
| 25 | 29.9 | 24.4 | 91 | 81 | 6 | 8 | 6.8 | ⌒° ● a. ◯↯● p. |
| 26 | 30 | 25.6 | 89 | 82 | 9 | 9 | ------ | |
| 27 | ------ | 25.4 | 90 | 63 | 5 | 8 | ------ | ◯ ↯ p. |
| 28 | 32.7 | 24.7 | 92 | 70 | 9 | 8 | ------ | ↯ p. |
| 29 | ------ | 23.9 | 97 | 61 | 10 | 9 | ------ | ⌓ a. ◯ p. |
| 30 | 34.1 | 23.6 | 98 | 68 | 8 | 7 | ------ | ⌓² a. ◯ ⊤ ⩛ p. |
| Mean | 32.1 | 24.1 | 94.9 | 71.1 | 7.1 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 55.8 | |

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 33.8 | 25.4 | 86 | 63 | 8 | 7 | ------ | ⩛ p. |
| 2 | 33.5 | 24.5 | 88 | 61 | 6 | 7 | ------ | ⩛ p. |
| 3 | 33.2 | 25.4 | 89 | 61 | 9 | 10 | ------ | |
| 4 | 33.5 | 25.3 | 91 | 61 | 7 | 9 | ------ | |
| 5 | 34 | 24.5 | 92 | 65 | 8 | 10 | ------ | ⊤ ↯ p. |
| 6 | 32.1 | 25.6 | 93 | 78 | 7 | 8 | ------ | d a. ⊤ p. |
| 7 | 30 | 24.4 | 97 | 71 | 9 | 10 | 18 | ⌒ ● ⊤ p. |
| 8 | 30.8 | 23.1 | 96 | 75 | 9 | 8 | 3.6 | |
| 9 | 30.5 | 23.9 | 97 | 83 | 9 | 9 | 5.4 | ● a. d p. |
| 10 | 31.5 | 24 | 95 | 72 | 7 | 9 | 10.4 | d ⌒ a. |
| 11 | 31.4 | 24.5 | 96 | 76 | 8 | 8 | 5.1 | ● a. d p. |
| 12 | 31.3 | 24 | 97 | 70 | 7 | 7 | 1.8 | d a. p. |
| 13 | 31.1 | 23.4 | 87 | 77 | 7 | 8 | 11.2 | d a. ● p. |
| 14 | 31.2 | 22.3 | 98 | 69 | 8 | 8 | ------ | ● a. |
| 15 | 32.3 | 23.6 | 93 | 68 | 7 | 8 | ------ | |
| 16 | 33 | 25.8 | 88 | 67 | 9 | 10 | ------ | |
| 17 | 32 | 25.9 | 83 | 67 | 9 | 8 | ------ | |
| 18 | 32 | 24.8 | 96 | 81 | 10 | 10 | ------ | ⊤ a. |
| 19 | 29.6 | 23.9 | 97 | 84 | 10 | 9 | 5.1 | ● a. |
| 20 | 31.6 | 24 | 95 | 68 | 8 | 10 | ------ | |
| 21 | 31.7 | 24.8 | 95 | 81 | 9 | 8 | 31 | ⊤ ● p. |
| 22 | 30 | 23.4 | 97 | 75 | 10 | 7 | 2 | ● a. d p. |
| 23 | 30.9 | 22.3 | 92 | 74 | 9 | 9 | ------ | d a. |
| 24 | 32.2 | 23 | 92 | 72 | 7 | 8 | 3.3 | ● p. |
| 25 | 32.5 | 21.2 | 96 | 65 | 8 | 8 | ------ | ● a. |
| 26 | 31.2 | 26 | 90 | 72 | 6 | 10 | ------ | ↙° p. |
| 27 | 32 | 27.1 | 76 | 67 | 9 | 9 | 1.5 | d a. p. ⊤ ●° p. |
| 28 | 29.4 | 24.9 | 88 | 73 | 9 | 9 | ------ | ⊤ p. |
| 29 | 32 | 25 | 88 | 66 | 9 | 10 | ------ | |
| 30 | 32.3 | 22.8 | 90 | 66 | 7 | 7 | ------ | |
| Mean | 31.8 | 24.4 | 91.9 | 70.9 | 8.2 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 98.4 | |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30 | 23.6 | 90 | 69 | 10 | 10 | 26.7 | |
| 2 | 30 | 23.6 | 95 | 74 | 8 | 8 | 3.8 | |
| 3 | 30 | 24.6 | 85 | 72 | 10 | 10 | 17.8 | |
| 4 | 29.8 | 23 | 92 | 71 | 10 | 10 | ------ | |
| 5 | 30.6 | 23.8 | 92 | 67 | 10 | 8 | 3.8 | |
| 6 | 30 | 23.8 | 89 | 70 | 6 | 10 | 17.8 | |
| 7 | 28.6 | 23.4 | 95 | 84 | 10 | 10 | 6.3 | |
| 8 | 30.4 | 25 | 84 | 85 | 6 | 8 | 14.4 | |
| 9 | 30.4 | 24.4 | 87 | 65 | 6 | 10 | ------ | |
| 10 | 30 | 24.6 | 84 | 77 | 10 | 10 | 5.1 | |
| 11 | 28.2 | 24.2 | 89 | 81 | 10 | 10 | 1.5 | |
| 12 | 30.4 | 23.6 | 87 | 67 | 10 | 10 | 11.4 | |
| 13 | 29.8 | 24.8 | 93 | 71 | 10 | 10 | 6.3 | |
| 14 | 29.2 | 24.8 | 92 | 79 | 10 | 10 | 21.6 | |
| 15 | 28.2 | 24 | 92 | 83 | 10 | 10 | 167.6 | |
| 16 | 28.4 | 23.4 | 93 | 86 | 10 | 10 | 11.5 | |
| 17 | 29.2 | 23.4 | 89 | 77 | 10 | 10 | 5.1 | |
| 18 | 29 | 25 | 92 | 89 | 10 | 10 | 7.7 | |
| 19 | 27.8 | 24.4 | 90 | 95 | 10 | 10 | 29.2 | |
| 20 | 29 | 24.6 | 86 | 71 | 10 | 10 | 12.7 | |
| 21 | 28 | 22.6 | 92 | 84 | 10 | 10 | 53.3 | |
| 22 | 30 | 22.8 | 88 | 67 | 10 | 10 | 12.7 | |
| 23 | 28.2 | 24.4 | 90 | 81 | 10 | 10 | 5.1 | |
| 24 | 29.6 | 24 | 88 | 71 | 10 | 8 | ------ | |
| 25 | 29.4 | 25.4 | 84 | 73 | 10 | 10 | ------ | |
| 26 | 30.6 | 25.8 | 84 | 70 | 10 | 8 | ------ | |
| 27 | 30.4 | 25.6 | 84 | 70 | 6 | 6 | ------ | |
| 28 | 30.6 | 23.4 | 84 | 66 | 4 | 8 | ------ | |
| 29 | 30 | 23 | 84 | 64 | 10 | 10 | 2.5 | |
| 30 | 30 | 24.4 | 84 | 71 | 10 | 10 | ------ | |
| Mean | 29.5 | 24.1 | 88.6 | 75 | 9.2 | 9.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 443.9 | |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | 23.5 | 96 | 51 | 10 | 10 | ------ | |
| 2 | ------ | 22.4 | 96 | 71 | 10 | 6 | ------ | |
| 3 | ------ | 22.2 | 97 | 67 | 4 | 8 | ------ | |
| 4 | ------ | 22.5 | 91 | 71 | 10 | 9 | ------ | ⊤ ⩛ ⊖ p. |
| 5 | ------ | 23.1 | 91 | 76 | 10 | 10 | ------ | ⊤ ⩛ ⊖ p. |
| 6 | 32.2 | 22.7 | 93 | 72 | 10 | 10 | ------ | ⊤ ⩛ ⊖ p. |
| 7 | 33.8 | 22.5 | 91 | 68 | 10 | 10 | 6.1 | ⊤ p² p. |
| 8 | 33.8 | 23.1 | 97 | 58 | 10 | 9 | 2 | ●° p. |
| 9 | 33.7 | 23.6 | 96 | 59 | 8 | 8 | 1.5 | ⌒ a. ●° p. |
| 10 | 32.7 | 24 | 93 | 65 | 8 | 8 | ------ | ⌒ a. |
| 11 | 30.3 | 23.5 | 92 | 73 | 10 | 10 | ------ | |
| 12 | 33.7 | 23.4 | 96 | 69 | 10 | 10 | 37.8 | ●² p. |
| 13 | 33.5 | 23.6 | 98 | 63 | 10 | 4 | ------ | |
| 14 | 33.7 | 23.5 | 95 | 58 | 9 | 9 | ------ | ⊤ p. |
| 15 | 31 | 23.4 | 94 | 77 | 10 | 10 | ------ | |
| 16 | 33.1 | 23.1 | 95 | 62 | 10 | 10 | ------ | |
| 17 | 31.4 | 23.1 | 94 | 68 | 10 | 10 | 38.1 | ●² p. |
| 18 | 28.4 | 23.5 | 97 | 84 | 10 | 10 | 13.2 | d a. p. |
| 19 | 31.5 | 23.1 | 98 | 87 | 10 | 10 | 12.5 | ⌒ d° a. d p. |
| 20 | 31.7 | 23.5 | 97 | 78 | 10 | 10 | .5 | d a. ⊤ p. |
| 21 | 32 | 24.2 | 93 | 70 | 10 | 10 | 5.6 | p² p. |
| 22 | 31.8 | 23.2 | 97 | 72 | 10 | 10 | 3.5 | ● a. p. |
| 23 | 32 | 23 | 93 | 70 | 10 | 4 | ------ | |
| 24 | 32.2 | 23.5 | 97 | 67 | 9 | 8 | ------ | |
| 25 | 32.2 | 22.5 | 96 | 71 | 7 | 4 | ------ | |
| 26 | 32.1 | 23.2 | 81 | 75 | 10 | 10 | .5 | d ↯ p. |
| 27 | 32.2 | 24.6 | 85 | 85 | 10 | 10 | 9.6 | p² a. d ●° ⊤ p. |
| 28 | 32.1 | 23.6 | 90 | 68 | 10 | 10 | 42.6 | d° ● a. ●² p. |
| 29 | 28.7 | 23.8 | 97 | 92 | 10 | 10 | 10.6 | d a. ● a. p. |
| 30 | 32.2 | 22.5 | 94 | 65 | 10 | 10 | 1.1 | p a. d p. |
| Mean | 32.1 | 23.2 | 94 | 70.4 | 9.5 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 185.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 34 | 24.2 | 80 | 59 | 10 | 10 | ------ |  |
| 2 | 34.3 | 24 | 92 | 59 | 5 | 3 | ------ | Ω° a. |
| 3 | 35.2 | 23.4 | 95 | 61 | 9 | 8 | ------ | Ω° a. ⋓° p. |
| 4 | 35.3 | 23.8 | 92 | 54 | 5 | 8 | ------ | Ω° a. |
| 5 | 35.3 | 23.5 | 95 | 68 | 4 | 8 | ------ | Ω° a. ⋓ ⊤ ☇ p. |
| 6 | 34.4 | 23.8 | 94 | 85 | 10 | 8 | 24.7 | ●² ⊤ a. ⊤ ● d p. |
| 7 | 32 | 23.5 | 96 | 83 | 6 | 10 | 4.1 | d ⊤ a. p ⋒² ⋓ p. |
| 8 | 32 | 21.8 | 96 | 63 | 4 | 5 | 6.1 | d a. p. ⋒ p. |
| 9 | 31.5 | 23.6 | 94 | 74 | 9 | 5 | 9.9 | ● a. ⌒ d a. p. ⋒ |
| 10 | 33 | 22.5 | 96 | 73 | 3 | 9 | ------ |  |
| 11 | 33 | 23 | 97 | 72 | 9 | 8 | 2.8 | Ω² ≡ a. ●° p. |
| 12 | 32.6 | 23.6 | 96 | 72 | 9 | 5 | 15.9 | d° ● a. |
| 13 | 32.5 | 22.6 | 96 | 75 | 3 | 10 | 2.5 | Ω² p° a. p° ●° p. |
| 14 | 31.2 | 22.5 | 94 | 87 | 10 | 10 | 5 | Ω² ●° a. d° a. p. |
| 15 | 30.7 | 23 | 95 | 71 | 10 | 10 | .5 | p° a. p. |
| 16 | 32.6 | 24.5 | 91 | 68 | 10 | 10 | ------ |  |
| 17 | 32 | 25 | 81 | 78 | 10 | 10 | .3 | p° p. |
| 18 | 32 | 25 | 93 | 80 | 10 | 10 | 2 | p° a. ●° ⌈⊿² p. |
| 19 | 30.8 | 23.5 | 97 | 73 | 10 | 10 | ------ | d° ≡ a. |
| 20 | 32 | 24 | 97 | 73 | 10 | 10 | ------ | ≡ ⌒ a. ☇ p. |
| 21 | 32.6 | 24 | 96 | 88 | 8 | 10 | 21.3 | Ω a. d ● ⊤ ☇ p. |
| 22 | 32.5 | 22.8 | 98 | 73 | 10 | 10 | .5 | ≡ ● a. |
| 23 | 32 | 22.5 | 98 | 93 | 4 | 10 | 34.8 | d° a. p d ●² p. |
| 24 | 31.5 | 22.4 | 97 | 79 | 5 | 9 | 7.5 | ≡ p a. p° p. |
| 25 | 31.8 | 23 | 96 | 67 | 5 | 10 | 17.5 | Ω a. d° ●° ☇ p. |
| 26 | 29.5 | 24.5 | 92 | 79 | 10 | 10 | 2.6 | ● a. ●° p. |
| 27 | 32.2 | 24.5 | 74 | 74 | 10 | 10 | ------ | p° a. |
| 28 | 30.5 | 26 | 88 | 76 | 10 | 10 | .3 | ☇ d° p. |
| 29 | 32.8 | 24.5 | 86 | 66 | 10 | 10 | .1 | p° a. ⋒ p. |
| 30 | 32 | 23.5 | 93 | 76 | 10 | 10 | ------ | Ω a. ⋓² p. |
| Mean | 32.5 | 23.6 | 92.8 | 73.3 | 7.9 | 8.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 158.4 |  |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 32.5 | 25.3 | 84 | 61 | 9 | 9 | ------ |  |
| 2 | 33.2 | 23.4 | 95 | 61 | 4 | 8 | ------ |  |
| 3 | 33.2 | 23 | 97 | 62 | 7 | 8 | ------ |  |
| 4 | 33.6 | 22.9 | 98 | 62 | 8 | 9 | ------ |  |
| 5 | 34.6 | 23 | 97 | 60 | 9 | 8 | ------ |  |
| 6 | 34.7 | 22.8 | 97 | 61 | 9 | 9 | 14.5 | ● ⊤° p. |
| 7 | 32 | 22.5 | 98 | 80 | 9 | 9 | ------ |  |
| 8 | 31.2 | 21.5 | 91 | 74 | 8 | 9 | 2.8 | d p. |
| 9 | 33.5 | 22 | 98 | 89 | 9 | 10 | 12.7 | d a. p. ● p. |
| 10 | 32.2 | 20 7 | 98 | 67 | 5 | 9 | ------ |  |
| 11 | 31.4 | 20.5 | 97 | 79 | 9 | 9 | ------ |  |
| 12 | 34 | 22.2 | 97 | 85 | 8 | 9 | 1 | d ●° p. |
| 13 | 32.5 | 21.2 | 98 | 70 | 8 | 8 | ------ |  |
| 14 | 32.5 | 20.7 | 96 | 68 | 9 | 9 | ------ |  |
| 15 | 33.6 | 21.4 | 97 | 67 | 8 | 10 | 7.4 | ● p. |
| 16 | 32.5 | 23.1 | 93 | 68 | 10 | 9 | ------ |  |
| 17 | 31.7 | 25.4 | 92 | 70 | 10 | 10 | ------ |  |
| 18 | 31 | 23.2 | 92 | 96 | 10 | 10 | 22.9 | ● d a. p. |
| 19 | 30.1 | 23.2 | 94 | 90 | 10 | 10 | 23.9 | ● d a. p. |
| 20 | 31.5 | 22.1 | 98 | 70 | 10 | 10 | ------ |  |
| 21 | 32.8 | 23.3 | 97 | 82 | 9 | 10 | 13.2 | d ●° p. |
| 22 | 31.7 | 22 | 98 | 71 | 10 | 8 | ------ |  |
| 23 | 33.5 | 21.5 | 98 | 64 | 10 | 8 | 5.3 | ≡ Ω a. ⊤° ●° p. |
| 24 | 31.8 | 21.3 | 97 | 69 | 6 | 8 | 24 |  |
| 25 | 31.4 | 22.5 | 98 | 70 | 9 | 8 | 1.6 | d a. ●° a. p. |
| 26 | 32 | 23 | 96 | 70 | 10 | 10 | ------ |  |
| 27 | 29.5 | 24.5 | 82 | 76 | 10 | 10 | 2.5 | ●° p. |
| 28 | 29.6 | 21.6? | 83 | 78 | 10 | 10 | 2.3 | ⊤° p. |
| 29 | 30 | 22.6 | 90 | 75 | 10 | 10 | ------ | ●° a. |
| 30 | 31.8 | 22.8 | 96 | 70 | 10 | 9 | ------ |  |
| Mean | 32.2 | 22.5 | 94.7 | 72.2 | 8.8 | 9.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 134.1 |  |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | mum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 32.8 | 21.4 | 81 | 57 | 6 | 5 | ------ |  |
| 2 | 33.4 | 21.6 | 88 | 61 | 4 | 3 | ------ |  |
| 3 | 33.5 | 23.1 | 92 | 64 | 3 | 4 | ------ |  |
| 4 | 33.8 | 22.6 | 95 | 63 | 4 | 5 | ------ |  |
| 5 | 33.4 | 23.6 | 93 | 62 | 6 | 5 | ------ |  |
| 6 | 34 | 23.1 | 95 | 60 | 4 | 6 | ------ | ◯ p. |
| 7 | 32.9 | 23.3 | 96 | 90 | 2 | 9 | 10.2 | ⊤ a. ● a. p. |
| 8 | 34.5 | 21.7 | 96 | 66 | 3 | 6 | 6.6 | ●° p. |
| 9 | 34.6 | 22.4 | 97 | 62 | 4 | 7 | ------ |  |
| 10 | 35 | 22.3 | 93 | 54 | 3 | 4 | ------ |  |
| 11 | 29.8 | 22.6 | 91 | 75 | 7 | 7 | ------ |  |
| 12 | 33.4 | 21.7 | 94 | 61 | 6 | 7 | 12.2 | ● p. |
| 13 | 35.6 | 22.4 | 97 | 87 | 5 | 9 | 24.9 | ● ⊤ a. p. |
| 14 | 32.4 | 21.4 | 97 | 65 | 5 | 10 | 9.1 | ● p. |
| 15 | 31.8 | 23.3 | 95 | 70 | 6 | 6 | ------ | ◯ p. |
| 16 | 32.4 | 25.6 | 86 | 71 | 7 | 7 | ------ |  |
| 17 | 31.4 | 25.5 | 78 | 73 | 7 | 9 | 18.6 | p p. |
| 18 | 29.3 | 23.3 | 88 | 77 | 10 | 9 | 26.5 | ● a. p. |
| 19 | 31.4 | 22 | 96 | 72 | 7 | 7 | 29.7 | ● p. |
| 20 | 32.2 | 22.2 | 97 | 69 | 7 | 7 | ------ |  |
| 21 | 32.4 | 23.1 | 94 | 68 | 6 | 6 | 11.4 | ⌒ a. |
| 22 | 30.9 | 23 | 95 | 74 | 10 | 7 | 15 | ● a. p. ⊤ p. |
| 23 | 33.3 | 22.5 | 97 | 64 | 6 | 5 | .5 | ●° p. |
| 24 | 32.8 | 22 | 95 | 65 | 4 | 6 | ------ |  |
| 25 | 32.9 | 22 | 91 | 63 | 3 | 4 | .5 |  |
| 26 | 32.5 | 24.6 | 94 | 72 | 6 | 7 | 23.4 | d a. |
| 27 | 29 | 23.5 | 91 | 89 | 10 | 10 | 25.4 | ● a. p. ⊤ p. |
| 28 | 30.8 | 23.6 | 82 | 75 | 10 | 10 | 34 | ●² p. |
| 29 | 26.7 | 22.5 | 96 | 85 | 10 | 10 | 12 | ● a. p. |
| 30 | 31 | 21.7 | 81 | 67 | 10 | 7 | ------ |  |
| Mean | 32.3 | 22.8 | 92 | 69.4 | 6 | 6.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 260 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 29 | 20.3 | 97 | 68 | 2 | 8 | 2.3 | Ω ≡ p a. |
| 2 | 30.2 | 20.9 | 98 | 65 | 7 | 5 | ------ | d p. |
| 3 | 30 | 20.7 | 98 | 64 | 2 | 8 | ------ | d a. |
| 4 | 30.8 | 21 | 98 | 64 | 2 | 2 | ------ |  |
| 5 | 31.3 | 21.1 | 97 | 63 | 7 | 2 | ------ | ≡ a. |
| 6 | 31.1 | 20.8 | 98 | 63 | 2 | 5 | ------ | Ω a. |
| 7 | 31 | 21 | 98 | 63 | 7 | 9 | ------ | ⌈⊿ p. |
| 8 | 30.2 | 20 | 98 | 68 | 2 | 6 | ------ |  |
| 9 | 30.7 | 19.6 | 98 | 67 | 2 | 2 | ------ | Ω ≡ a. |
| 10 | 31.1 | 19.1 | 97 | 62 | 7 | 5 | ------ |  |
| 11 | 31.5 | 19.6 | 98 | 62 | 4 | 9 | 2 | d ●° a. |
| 12 | 30.2 | 20.3 | 98 | 65 | 2 | 8 | ------ |  |
| 13 | 30.7 | 20.8 | 97 | 64 | 2 | 2 | ------ |  |
| 14 | 31 | 20 6 | 98 | 64 | 7 | 9 | 2.8 | ⊤° ●° p. |
| 15 | 31.1 | 21.1 | 98 | 63 | 5 | 8 | ------ | Ω a. |
| 16 | 31.4 | 20.4 | 97 | 64 | 7 | 8 | ------ | Ω ≡ a. |
| 17 | 31.7 | 20.8 | 98 | 66 | 8 | 9 | 1.5 | p° p. |
| 18 | 29.5 | 20 | 98 | 66 | 9 | 8 | 8.9 | Ω ≡ a. ●° p. |
| 19 | 29.1 | 19.3 | 98 | 65 | 4 | 9 | 4.1 | ⊤° ●° p. |
| 20 | 30.5 | 19.9 | 96 | 64 | 7 | 8 | 1 | ●° p. |
| 21 | 31 | 20.3 | 97 | 63 | 2 | 8 | ------ | d p. |
| 22 | 29.9 | 20 | 98 | 64 | 3 | 9 | 2.8 | ●° p. |
| 23 | 30.1 | 19.5 | 98 | 63 | 7 | 6 | 7.6 | ●° p. |
| 24 | 30.8 | 19.3 | 97 | 63 | 2 | 5 | ------ | Ω a. |
| 25 | 31.2 | 19.7 | 98 | 63 | 3 | 7 | 1.8 | Ω a. ●° p. |
| 26 | 31.5 | 20 | 98 | 68 | 8 | 9 | ------ |  |
| 27 | 29.8 | 19.4 | 98 | 70 | 10 | 10 | 38.4 | p° a. ●² p. |
| 28 | 27.7 | 19 1 | 98 | 70 | 8 | 10 | 24.9 | ● a. p. |
| 29 | 27.1 | 18.8 | 98 | 76 | 10 | 10 | 23.6 | ● a. p. d p. |
| 30 | 27 | 18.4 | 98 | 72 | 10 | 9 | ------ | Ω ≡ a. |
| Mean | 30.3 | 20.1 | 97.7 | 65.4 | 5.3 | 7.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 121.7 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.4 | 23.9 | 90 | 76 | 7 | 8 | ------ | |
| 2 | 31.1 | 23.2 | 98 | 74 | 6 | 7 | ------ | Ω² a. |
| 3 | 31 | 23 | 98 | 73 | 10 | 5 | ------ | |
| 4 | 31.3 | 22.1 | 99 | 72 | 8 | 9 | ------ | Ω² a. |
| 5 | 31 | 22.6 | 96 | 71 | 10 | 9 | ------ | Ω² a. |
| 6 | 31.7 | 22.5 | 99 | 76 | 5 | 7 | ------ | Ω² a. |
| 7 | 32 | 22.1 | 97 | 81 | 4 | 9 | 20.1 | Ω² a. ● ☈ p. |
| 8 | 32.3 | 21.2 | 99 | 68 | 4 | 7 | ------ | Ω² a. |
| 9 | 33.1 | 21.5 | 91 | 71 | 4 | 7 | ------ | Ω° a. |
| 10 | 33.9 | 21 | 88 | 52 | 3 | 4 | 2.3 | Ω² a. ● p. |
| 11 | 26.3 | 21.9 | 96 | 92 | 8 | 9 | 18.5 | ● p. |
| 12 | 33 | 22.1 | 96 | 77 | 7 | 8 | ? | ● a. p. |
| 13 | 32.1 | 21.7 | 96 | 75 | 4 | 8 | 8.3 | ● a. p. ☈ p. |
| 14 | 32 | 21.9 | 98 | 91 | 4 | 10 | 21.8 | Ω² a. ● ☈² p. |
| 15 | 31.5 | 23.3 | 93 | 70 | 10 | 8 | ------ | |
| 16 | 30.1 | 22.9 | 91 | 80 | 7 | 10 | .8 | ● p. |
| 17 | 29.9 | 22.8 | 93 | 86 | 9 | 10 | 5.6 | ● p. |
| 18 | 30.5 | 22.5 | 96 | 84 | 8 | 7 | 43.7 | ● a. p. ☈ p. |
| 19 | 31.9 | 21.6 | 94 | 92 | 6 | 10 | 41.2 | ● a. p. ☈ p. |
| 20 | 32.3 | 22.1 | 97 | 73 | 8 | 7 | 14.5 | ● p. |
| 21 | 31 | 21.5 | 98 | 83 | 6 | 8 | 4.3 | ● p. |
| 22 | 30.2 | 21.5 | 98 | 74 | 8 | 7 | .8 | ● a. |
| 23 | 33.1 | 21.5 | 97 | 59 | 3 | 4 | ------ | Ω² a. ϟ p. |
| 24 | 34.3 | 21.3 | 92 | 91 | 4 | 10 | 33 | Ω² a. ● ☈° p. |
| 25 | 32.3 | 21.5 | 93 | 75 | 4 | 7 | 3.3 | ● ☈ p. |
| 26 | 32.3 | 22.3 | 91 | 79 | 7 | 7 | 5.6 | ● p. |
| 27 | 29.5 | 22.1 | 92 | 93 | 10 | 10 | 83.3 | ●² p. |
| 28 | 28.5 | 21.7 | 89 | 84 | 10 | 10 | 11.9 | ● p. |
| 29 | 26.3 | 20.9 | 96 | 90 | 10 | 10 | 37.4 | ● a. p. |
| 30 | 29.4 | 21 | 90 | 77 | 10 | 9 | ------ | |
| Mean | 31.2 | 22 | 94.7 | 78 | 6.8 | 8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 356.4? | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.6 | 25 | 88 | 79 | 10 | 10 | 2.2 | d a. ●° p. |
| 2 | 30.9 | 25.9 | 91 | 78 | 10 | 10 | 1.1 | d a. ●° p. |
| 3 | 31.4 | 23.6 | 94 | 75 | 10 | 8 | 5.3 | d a. ● p. |
| 4 | 30.8 | 22.9 | 95 | 85 | 10 | 10 | 17.7 | ≡° ● d a. ● ψ p. |
| 5 | 31.3 | 22.8 | 97 | 86 | 10 | 10 | 7.1 | ○° a. p. ⊤ ● ψ p. |
| 6 | 31.9 | 22.5 | 96 | 74 | 10 | 8 | ------ | ≡° a. ψ ϟ p. |
| 7 | 31.8 | 22.5 | 96 | 74 | 3 | 9 | 15 | ≡° Ω a. ● ☈ p. |
| 8 | 31.1 | 22.1 | 87 | 73 | 10 | 10 | .8 | ○ a. ●° ⌒² d ☈ |
| 9 | 32 | 23.1 | 94 | 66 | 3 | 5 | ------ | d ϟ p. |
| 10 | 32.7 | 22.5 | 90 | 65 | 2 | 2 | ------ | Ω a. |
| 11 | 32 | 23.7 | 88 | 75 | 10 | 10 | ------ | d a. |
| 12 | 31.9 | 22.5 | 95 | 71 | 3 | 7 | 17.9 | ⊤ a. ⌒ d ● ☈ |
| 13 | 32 | 22.8 | 97 | 72 | 4 | 7 | 2.5 | ⊤ a. d ●° ☈ p. |
| 14 | 31.8 | 22 | 97 | 72 | 8 | 8 | 39.6 | d ●² ☈ p. |
| 15 | 31.6 | 22.6 | 96 | 72 | 10 | 10 | ------ | ○ a. ⌒ ϟ p. |
| 16 | 31 | 21 | 96 | 77 | 10 | 10 | 43.3 | ○ d a. d ●² ☈ |
| 17 | 29 | 23.8 | 81 | 77 | 10 | 10 | 10.8 | ● a. p. |
| 18 | 29.9 | 25.5 | 86 | 74 | 10 | 10 | ------ | d a. p. ϟ p. |
| 19 | 31 | 23.1 | 88 | 71 | 10 | 10 | 3.6 | d a. ○ a. p. ● ϟ |
| 20 | 31.1 | 22.9 | 93 | 91 | 10 | 10 | 80.9 | ●² ⊤ p. |
| 21 | 30.6 | 22.5 | 97 | 75 | 9 | 9 | 2.9 | ● ⌒ p. |
| 22 | 30 | 23.1 | 98 | 77 | 10 | 10 | 47 | d a. ●² ☈ p. |
| 23 | 32 | 22 | 97 | 71 | 3 | 6 | 2.3 | ○ a. p. ●° ☈ p. |
| 24 | 31.2 | 23.4 | 96 | 70 | 10 | 6 | ------ | ⊤ ⌒ d ϟ p. |
| 25 | 31.8 | 22.5 | 97 | 69 | 4 | 3 | 2.9 | Ω a. ● ⌒ ϟ p. |
| 26 | 31.9 | 22 | 97 | 75 | 9 | 10 | 1.3 | ○ a. p. ●° p. |
| 27 | 28.8 | 25.2 | 83 | 83 | 10 | 10 | 89.8 | ↙° ● a. p. ☈ p. |
| 28 | 28 | 23.5 | 84 | 83 | 10 | 10 | 40.2 | ● ⊤ a. ● ☈ p. |
| 29 | 28.5 | 22.2 | 85 | 84 | 10 | 10 | 129.5 | ⊤ ● a. ☈ ●² p. |
| 30 | 26.3 | 21.5 | 96 | 95 | 10 | 10 | 170.8 | ●² ☈² a. p. |
| Mean | 30.8 | 23 | 92.5 | 76.3 | 8.3 | 8.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 734.5 | |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 27.6 | 23.5 | 93 | 96 | 10 | 10 | 42.6 | Ω a. ● a. p. |
| 2 | 33 | 22.6 | 97 | 66 | 3 | 8 | ------ | Ω ≡ a. |
| 3 | 33.8 | 22.9 | 95 | 57 | 3 | 9 | 2.8 | Ω ≡° a. ● p. |
| 4 | 33 | 21.9 | 96 | 72 | 3 | 9 | ------ | Ω ≡° a. ⊤ p. |
| 5 | 33.6 | 22.3 | 94 | 66 | 9 | 9 | 3 | Ω a. ● p. |
| 6 | 33.8 | 22 | 96 | 66 | 3 | 9 | 9.1 | Ω ≡° a. ● ☈ p. |
| 7 | 34.5 | 22.2 | 94 | 50 | 3 | 2 | 10.9 | Ω a. ● ☈ p. |
| 8 | 34 | 22.6 | 95 | 61 | 3 | 3 | ------ | Ω a. |
| 9 | 34.8 | 23.2 | 96 | 59 | 3 | 3 | ------ | Ω ≡° a. |
| 10 | 34.6 | 22.6 | 92 | 47 | 3 | 2 | ------ | Ω a. |
| 11 | 34.5 | 23 | 93 | 76 | 7 | 10 | ------ | Ω a. d° a. |
| 12 | 34.8 | 22.6 | 92 | 54 | 2 | 3 | 3.6 | Ω a. ● p. |
| 13 | 35.3 | 23.2 | 97 | 58 | 3 | 4 | 4.3 | Ω ≡ a. ● p. |
| 14 | 34.8 | 22.2 | 87 | 53 | 3 | 2 | ------ | Ω a. |
| 15 | 35.2 | 23.2 | 94 | 61 | 4 | 8 | ------ | Ω a. |
| 16 | 31.5 | 22.5 | 96 | 80 | 9 | 9 | 14 | Ω ≡° a. ● p. |
| 17 | 31.5 | 24.6 | 89 | 69 | 9 | 9 | ------ | Ω a. d° p. |
| 18 | 31.5 | 22.8 | 95 | 64 | 4 | 9 | ------ | Ω ≡° a. |
| 19 | 31.4 | 22.9 | 93 | 74 | 2 | 10 | ------ | Ω a. d° p. |
| 20 | 32.2 | 22.2 | 96 | 70 | 10 | 10 | 12.2 | Ω a. ⊤ ● p. |
| 21 | 33.7 | 21.5 | 97 | 68 | 9 | 9 | 6.6 | Ω ≡ a. d° ● p. |
| 22 | 33.3 | 23.8 | 97 | 81 | 9 | 7 | 29.2 | Ω ≡ a. ● p. |
| 23 | 33.6 | 23 | 95 | 60 | 3 | 2 | ------ | Ω ≡° a. ⊤ p. |
| 24 | 34.4 | 22.4 | 96 | 59 | 3 | 3 | ------ | Ω ≡° a. |
| 25 | 35.1 | 23.8 | 96 | 54 | 4 | 2 | ------ | Ω ≡° a. |
| 26 | 34.5 | 22.7 | 96 | 66 | 3 | 10 | 1.3 | Ω ≡° a. d p. |
| 27 | 27.2 | 24 | 85 | 76 | 10 | 10 | 22.9 | ● a. p. |
| 28 | 29.2 | 22.8 | 94 | 91 | 10 | 10 | 13.3 | ⊤ a ● a. p. |
| 29 | 27 | 22.7 | 89 | 94 | 10 | 10 | 54.1 | ●² a. p. ☈ p. |
| 30 | 32.5 | 21.4 | 96 | 68 | 10 | 10 | 52.6 | ●² a. p. |
| Mean | 32.9 | 22.8 | 94 | 67.2 | 5.6 | 7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 282.5 | |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 23.7 | 94 | 83 | 10 | 10 | 1.3 | Ω ● a. d p. |
| 2 | 34.2 | 24 | 82 | 58 | 10 | 7 | ------ | |
| 3 | 34.1 | 24.8 | 79 | 54 | 10 | 5 | ------ | ᗡ p. |
| 4 | 34.1 | 24.4 | 80 | 54 | 10 | 10 | ------ | ψ p. |
| 5 | 34 | 24.5 | 80 | 54 | 10 | 5 | ------ | ᗡ p. |
| 6 | 35.5 | 22.9 | 90 | 55 | 10 | 5 | ------ | |
| 7 | 32.9 | 23.7 | 92 | 70 | 9 | 5 | 25.4 | Ω a. ⊤ ● p. |
| 8 | 31.6 | 24.1 | 95 | 70 | 10 | 3 | .3 | Ω° ≡° a. ψ ●° p. |
| 9 | 31.8 | 23.5 | 92 | 70 | 10 | 1 | 31.3 | d ● ⌒ a. ●° ψ p. |
| 10 | 31.7 | 23.1 | 97 | 72 | 10 | 9 | ------ | Ω² ≡ a. ⊕ p. |
| 11 | 27.4 | 23.8 | 95 | 93 | 10 | 10 | 7.1 | Ω ≡° ● a. d² p. |
| 12 | 32.2 | 22.1 | 96 | 68 | 10 | 5 | 39.4 | Ω ≡° a. ϟ ⊤ ● p. |
| 13 | 31.3 | 23.4 | 96 | 76 | 9 | 2 | 3 | Ω ≡° ● a. |
| 14 | 32.8 | 22.1 | 95 | 60 | 9 | 10 | ------ | Ω ≡° a. |
| 15 | 32.3 | 22.3 | 89 | 58 | 10 | 10 | ------ | Ω a. |
| 16 | 30.7 | 24.7 | 80 | 72 | 10 | 10 | ------ | ϟ p. |
| 17 | 28.5 | 23.7 | 73 | 85 | 10 | 10 | 1.8 | d ●° a. |
| 18 | 30.4 | 20.8 | 97 | 78 | 10 | 10 | 17.3 | Ω° ≡ d a. ⊤ ●° p. |
| 19 | 30 | 22.2 | 96 | 88 | 10 | 10 | 49.7 | Ω° ≡° a. ● a. p. |
| 20 | 34 | 23.2 | 96 | 72 | 10 | 1 | ------ | Ω ≡° ⌒ a. d p. |
| 21 | 32.2 | 23.8 | 95 | 67 | 10 | 9 | 26.4 | Ω ≡° a. ⊤ ϟ ● p. |
| 22 | 31 | 23.3 | 97 | 79 | 10 | 10 | 8.2 | ● a. p. d ⊤ ϟ p. |
| 23 | 30.9 | 23.9 | 97 | 73 | 10 | 1 | 1.6 | Ω a. ●° a. p. ϟ p. |
| 24 | 31.4 | 22.2 | 95 | 69 | 10 | 1 | ------ | Ω ≡° a. d ⊤ ϟ p. |
| 25 | 33.9 | 22.2 | 95 | 54 | 10 | 3 | ------ | Ω ≡° a. ⊤ ϟ p. |
| 26 | 33.7 | 23.6 | 87 | 72 | 10 | 10 | 2 | Ω a. d ●° ϟ p. |
| 27 | 28.6 | 25 | 77 | 80 | 10 | 10 | 1.6 | ϟ a. ↙° d a. p. ● |
| 28 | 26.9 | 23.4 | 93 | 86 | 10 | 10 | 3.8 | d ● a. |
| 29 | 28.7 | 22.8 | 93 | 85 | 10 | 10 | 18.6 | d ● a. ● ⊤ ϟ p. |
| 30 | 25.2 | 23 | 97 | 92 | 10 | 10 | 53.1 | ● ⊤ ϟ a. p. |
| Mean | 31.5 | 23.3 | 90.7 | 71.6 | 9.9 | 7.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 291.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 29 | 23 | 94 | 91 | 10 | 10 | 14 | ● a. p. ⌈↯ p. |
| 2 | 32.9 | 23.8 | 84 | 70 | 9 | 6 | ------ |  |
| 3 | 33.2 | 24.2 | 84 | 65 | 3 | 3 | ------ |  |
| 4 | 33.5 | 24 | 83 | 67 | 7 | 7 | ------ | ⊖ p. |
| 5 | 33.7 | 24.4 | 86 | 62 | 9 | 5 | ------ |  |
| 6 | 33.7 | 23.9 | 90 | 64 | 4 | 5 | ------ | ⊖° d° p. |
| 7 | 32.1 | 22.9 | 97 | 71 | 2 | 7 | ------ | ⊤ Ω a. |
| 8 | 31.9 | 23 | 89 | 71 | 2 | 3 | ------ | ⊖ p. |
| 9 | 32.3 | 23.6 | 93 | 72 | 2 | 6 | ------ | ⊤ p. |
| 10 | 32.7 | 23.5 | 98 | 68 | 1 | 3 | ------ | Ω² a. |
| 11 | 33.2 | 24.2 | 90 | 63 | 7 | 8 | .3 | d° ⊤² ⌒² p. |
| 12 | 33.4 | 24.1 | 85 | 58 | 7 | 6 | ------ | ⊤ ⋦ p. |
| 13 | 33.5 | 23.8 | 96 | 63 | 1 | 5 | .3 | Ω a. d° ⌈↯ p. |
| 14 | 33 | 23.6 | 97 | 69 | 3 | 6 | ------ | Ω a. d° p. |
| 15 | 32.7 | 23 | 96 | 58 | 8 | 8 | ------ |  |
| 16 | 30.7 | 23.5 | 93 | 80 | 10 | 10 | 41.1 | d° ●² p. |
| 17 | 28.6 | 23.4 | 89? | 91 | 10 | 10 | 90.1 | d a. ●² a. p. |
| 18 | 30.3 | 23.3 | 81 | 70 | 10 | 10 | ------ |  |
| 19 | 33 | 22 | 94 | 69 | 8 | 7 | 1 | ⊤° d° p. |
| 20 | 31.9 | 23.3 | 91 | 71 | 7 | 4 | ------ |  |
| 21 | 31.3 | 24 | 95 | 79 | 8 | 7 | 3.8 | Ω° a. d p. |
| 22 | 31.8 | 22.5 | 95 | 67 | 4 | 4 | .5 | ⊤ d ⌒ p. |
| 23 | 32.1 | 22.7 | 97 | 65 | 3 | 4 | ------ |  |
| 24 | 32.2 | 23.2 | 94 | 66 | 6 | 3 | ------ | ⌒ p. |
| 25 | 32.2 | 24.3 | 95 | 73 | 2 | 4 | ------ |  |
| 26 | 33 | 23.4 | 96 | 67 | 7 | 7 | 28.4 | ↙° p. |
| 27 | 27 | 24.4 | 82? | 97 | 10 | 10 | 75.7 | ↙° d ● a. p. ↙² p. |
| 28 | 26.7 | 22.7 | 98 | 92 | 10 | 10 | 131.8 | ↙² a. ●² a. p. ↙° p. |
| 29 | 29.4 | 22.3 | 92 | 92 | 10 | 10 | 54.3 | ● ↙ a. p. ⊤ p. |
| 30 | 28.2 | 22.6 | 87 | 84 | 10 | 10 | 23.9 | d a. ↙° a. p. ● p. |
| Mean | 31.6 | 23.4 | 91.4 | 72.5 | 6.3 | 6.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 465.2 |  |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 34.7 | 22.4 | 97 | 56 | 10 | 10 | ------ | Ω² a. ⊕° ◯° a. p. |
| 2 | 35.6 | 22.2 | 98 | 55 | 7 | 9 | ------ | Ω² a. ◌° a. p. ⊖° p. |
| 3 | 34.7 | 22.7 | 94 | 56 | 6 | 7 | ------ | ◯° a. p. ⌈↯° p. |
| 4 | 35.3 | 22.7 | 96 | 56 | 6 | 9 | ------ | Ω² a. ◌² a. p. ψ² p. |
| 5 | 34.9 | 22.8 | 96 | 53 | 10 | 8 | ------ | Ω° ≡° a. ◯° a. p. |
| 6 | 35.8 | 22.8 | 95 | 52 | 5 | 3 | ------ | Ω° a. ⌈↯° p. |
| 7 | 34.7 | 22.9 | 96 | 55 | 10 | 5 | ------ | ⊤° a. p. ⌒° ⌈↯° p. |
| 8 | 34.3 | 22.7 | 97 | 54 | 4 | 3 | ------ | Ω° a. ⋦° p. |
| 9 | 34.6 | 22.4 | 96 | 53 | 8 | 3 | ------ | Ω² a. ⋦° p. |
| 10 | 34.1 | 20.9 | 95 | 50 | 5 | 9 | ------ | ◌° a. p. ⌈↯° ⊖° p. |
| 11 | 30.4 | 22.2 | 97 | 68 | 9 | 10 | 4.8 | d° a. ⊤° d² p. |
| 12 | 33.1 | 22 | 99 | 62 | 7 | 5 | .3 | ◯° a. p ⌒° ⋦° d² p. |
| 13 | 34 | 22.9 | 98 | 65 | 5 | 7 | ------ | ⊤° a. ⌈↯° p. |
| 14 | 33.2 | 21.8 | 99 | 57 | 9 | 8 | ------ | Ω² a. ◯° ⋦° p. |
| 15 | 31.9 | 20.9 | 98 | 63 | 9 | 10 | ------ | Ω² ◌° a. d° p. |
| 16 | 25.8 | 23.3 | 98 | 93 | 10 | 10 | 2.8 | Ω° d° a. d a. p. |
| 17 | 26.8 | 23.6 | 87 | 81 | 10 | 10 | .8 | d a. p. |
| 18 | 33.5 | 24.3 | 81 | 55 | 10 | 10 | ------ | ◌° a. p. ⋦° p. |
| 19 | 33.7 | 22.8 | 97 | 57 | 10 | 9 | 1.5 | Ω° ⊕² a ⊕° ⊤° d² p |
| 20 | 34.3 | 22.5 | 100 | 57 | 9 | 3 | 4.3 | ≡² a. ⌈↯° d² p. |
| 21 | 33.4 | 23 | 97 | 62 | 10 | 5 | 5.1 | ⊤° d² p. |
| 22 | 32 | 24 | 98 | 94 | 8 | 9 | 28.2 | d² ⊤° a. ⌈↯° ● p. |
| 23 | 33.8 | 22.9 | 99 | 64 | 10 | 3 | ------ | ⌒° ⌈↯° p. |
| 24 | 34 | 22 | 97 | 54 | 4 | 2 | ------ | Ω² a. ⌒° p. |
| 25 | 32.6 | 21.9 | 97 | 66 | 8 | 8 | ------ | Ω² a. ⊕° a. p. d° p. |
| 26 | 31.5 | 22.7 | 98 | 72 | 10 | 10 | 39.7 | ⊕° a. ⊤° ⋦° ● p. |
| 27 | 29.2 | 22.8 | 87 | 63 | 10 | 10 | 22.4 | ● a. p. ↙° p. |
| 28 | 29 | 23.3 | 85 | 74 | 10 | 10 | 5.6 | d² a. p. |
| 29 | 29.3 | 24.3 | 79 | 74 | 10 | 10 | 8.7 | d² a. p. |
| 30 | 25.3 | 22.6 | 97 | 90 | 10 | 10 | 6.9 | d² ⊤° a. p. |
| Mean | 32.5 | 22.7 | 94.9 | 63.7 | 8.3 | 7.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 131.1 |  |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 28.4 | 22.4? | 96 | 89 | 10 | 10 | 43.2 | ●° d a. ● p. |
| 2 | 31.7 | 24 | 91 | 72 | 8 | 8 | -------- |  |
| 3 | 31.9 | 23.6 | 95 | 70 | 0 | 4 | -------- | Ω² a. |
| 4 | 31.7 | 23.7 | 94 | 69 | 1 | 10 | -------- |  |
| 5 | 32.4 | 23.9 | 92 | 63 | 6 | 7 | -------- |  |
| 6 | 32.3 | 23.5 | 95 | 65 | 0 | 4 | -------- |  |
| 7 | 31.9 | 23.6 | 97 | 65 | 0 | 2 | -------- | Ω² ≡° a. |
| 8 | 32.5 | 23 | 97 | 59 | 0 | 2 | -------- | Ω² ≡ a. |
| 9 | 32.3 | 23.8 | 96 | 70 | 0 | 4 | -------- | Ω a. |
| 10 | 33.1 | 23.5 | 97 | 56 | 0 | 1 | -------- | Ω² a. |
| 11 | 33 | 24.4 | 97 | 59 | 0 | 3 | -------- | Ω² a. ⊤ ψ p. |
| 12 | 32.9 | 24 | 93 | 59 | 1 | 4 | -------- | Ω² a. ⌒ p. |
| 13 | 32.5 | 24.3 | 97 | 68 | 0 | 5 | -------- | Ω² a. ⊤ p. |
| 14 | 33.8 | 23 | 97 | 60 | 0 | 4 | -------- | Ω² a. |
| 15 | 32.8 | 21.5 | 92 | 59 | 3 | 6 | 1.8 | Ω² a. d p. |
| 16 | 27.2 | 24.2 | 96 | 95 | 10 | 10 | 215.4 | ●² a. p. |
| 17 | 24.6 | 23 | 98 | 98 | 10 | 10 | 545.1 | ↙ ●² a. p. |
| 18 | 30 | 22.9 | 97 | 80 | 10 | 10 | 5.1 | ●° a. |
| 19 | 32.5 | 23 | 97 | 68 | 1 | 4 | -------- | d° p. |
| 20 | 31.8 | 23.2 | 98 | 68 | 1 | 6 | -------- | d° p. |
| 21 | 31.4 | 23.1 | 97 | 80 | 0 | 9 | 2.5 | d p. |
| 22 | 32.4 | 23.2 | 96 | 69 | 6 | 4 | 8.1 | ⌒ a. ● p. |
| 23 | 32 | 24 | 95 | 72 | 3 | 7 | -------- | Ω a. |
| 24 | 31.9 | 23.3 | 98 | 71 | 0 | 6 | -------- | Ω² a. |
| 25 | 34.8 | 22.4 | 96 | 51 | 0 | 2 | -------- | Ω² a. |
| 26 | 32.3 | 25.1 | 87 | 65 | 4 | 9 | 32.5 | d° ●° p. |
| 27 | ------ | 22.4 | 98 | ------ | 10 | 10 | 118.7 | ↙° ●² a. p. |
| 28 | ------ | ------ | ------ | ------ | 10 | 10 | 193.5 | ↙° a ●² a. p ↙² p |
| 29 | ------ | ------ | ------ | ------ | 10 | 10 | 83.6 | ● a. p. ⌈↯ p. |
| 30 | ------ | ------ | ------ | ------ | 10 | 10 | 53.1 | ● a. p. |
| Mean | 31.7 | 23.4 | 95.5 | 69.2 | 3.8 | 6.4 | -------- |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 1,302.6 |  |

### SANTO DOMINGO.[1]

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | ------ | ------ | ------ | ------ | 10 | 8 | ------ | ◌² a. d° p. |
| 2 | ------ | ------ | ------ | ------ | 10 | 7 | 0.2 | d a. ⊤° a. p. ◯° p. |
| 3 | ------ | ------ | ------ | ------ | 7 | 7 | ------ | ◌° p. |
| 4 | ------ | ------ | ------ | ------ | 8 | 9 | ------ |  |
| 5 | ------ | ------ | ------ | ------ | 8 | 4 | ------ | ψ p. |
| 6 | ------ | ------ | ------ | ------ | 8 | 5 | ------ | Ω p. |
| 7 | ------ | ------ | ------ | ------ | 3 | 7 | 1.8 | d² a. |
| 8 | ------ | ------ | ------ | ------ | 3 | 1 | ------ | Ω p. |
| 9 | ------ | ------ | ------ | ------ | 3 | 3 | ------ | Ω p. |
| 10 | ------ | ------ | ------ | ------ | 3 | 3 | 1.3 | Ω a. ●° p. |
| 11 | ------ | ------ | ------ | ------ | 7 | 4 | ------ | ●° ⌒² v a. Ω p. |
| 12 | ------ | ------ | ------ | ------ | 1 | 4 | ------ | Ω a. |
| 13 | ------ | ------ | ------ | ------ | 5 | 3 | .8 | ●° a. d° p. |
| 14 | ------ | ------ | ------ | ------ | 2 | 4 | ------ | Ω a. d° p. |
| 15 | ------ | ------ | ------ | ------ | 7 | 6 | .8 | d° ⌒° ●° p. |
| 16 | ------ | ------ | ------ | ------ | 7 | 10 | 19.8 | ⌒° d ●° a. ↙° ● p. |
| 17 | ------ | ------ | ------ | ------ | 10 | 10 | 4.8 | ●° d a. ↙° a. p. |
| 18 | ------ | ------ | ------ | ------ | 10 | 10 | 1.3 | ⋦ ●° p. |
| 19 | ------ | ------ | ------ | ------ | 5 | 4 | .5 | ●° a. Ω ⋦° p. |
| 20 | ------ | ------ | ------ | ------ | 5 | 7 | ------ |  |
| 21 | ------ | ------ | ------ | ------ | 0 | 2 | 3.3 | Ω² a. Ω p. |
| 22 | ------ | ------ | ------ | ------ | 7 | 4 | 19.4 | ⌒ a. ● a. p. |
| 23 | ------ | ------ | ------ | ------ | 5 | 3 | ------ | ● ⌒ v a. |
| 24 | ------ | ------ | ------ | ------ | 7 | 3 | 28 | ● a. p. |
| 25 | ------ | ------ | ------ | ------ | 4 | 6 | .9 | d p. |
| 26 | ------ | ------ | ------ | ------ | 7 | 8 | 40.4 | ● a. p. ↙° p. |
| 27 | ------ | ------ | ------ | ------ | 10 | 10 | 102.8 | ↙° ●² d a. p. ↙ p. |
| 28 | ------ | ------ | ------ | ------ | 10 | 10 | 18.5 | ● a. ↙° d a. p. |
| 29 | ------ | ------ | ------ | ------ | 10 | 10 | 1.3 | ↙° d p. |
| 30 | ------ | ------ | ------ | ------ | 10 | 10 | ------ | ↙° a. d° a. p. |
| Mean | ------ | ------ | ------ | ------ | 6.4 | 6.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 245.9 |  |

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[1] The thermometer shelter of this station was destroyed by the typhoon of August 26, 1911.

# SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, $3^h$ $21^m$. **Guam** (Mariana Islands). Earthquake of intensity III.

1, $8^h$ $38^m$. **Laoag** (NW of Luzon). Oscillatory earthquake of intensity III.

2, $16^h$ $34^m$ $47^s$.* **Agusan Valley** (E of Mindanao). Earthquake of intensity IV and long duration, which was perceptible throughout a portion of the valley measuring over 100 kilometers in the direction N–S. At $17^h$ $30^m$ there was a repetition which developed force III in the central part of the valley.

3, $6^h$ $37^m$. **Agusan Valley** (E of Mindanao). Earthquake of intensity IV. A repetition at $18^h$ $58^m$ showed intensity II–III in the central part of the valley.

5, $10^h$ $8^m$ $48^s$.* **Western Leyte.** Earthquake of force VII on the entire western coast of the island lying between parallels 11° and 10° 20′ north, and on the Camote Islands which lie west thereof at a distance of about 35 kilometers. The epicenter appears to have been between the latter islands and the western coast of Leyte.

6, $10^h$ $14^m$ $47^s$.* **Agusan Valley** (E of Mindanao). Earthquake of intensity V, lasting 45 seconds. It was felt throughout the entire valley.

6, $21^h$ $20^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

7, $20^h$ $2^m$. **Catbalogan** (W of Samar). Earthquake of intensity III.

8, $4^h$ $57^m$. **Western Leyte.** Oscillatory earthquake of intensity IV; duration 18 seconds. This disturbance originated beyond doubt in the same center as that of the 5th. There was a repetition having intensity III at $0^h$ $13^m$ of the 9th.

10, $6^h$ $13^m$. **Agusan Valley** (E of Mindanao). Earthquake of force III which was felt only in the central region of the valley.

11, $17^h$ $36^m$. **Vigan** (NW of Luzon). Oscillatory earthquake. Direction SE–NW, intensity II–III, duration 4 seconds.

12, $3^h$ $5^m$. **Western Leyte.** Oscillatory earthquake of force III–IV, felt throughout a large part of the island and on the Camote Islands. Two repetitions of less intensity, one at $14^h$ $38^m$ and the other at $18^h$ $57^m$, were perceptible only along the western coast of Leyte, between parallels 11° and 10° 20′ north.

13, $23^h$ $35^m$. **Romblon Island.** Oscillatory earthquake. Direction SW–NE, intensity II–III, duration 2 seconds.

14, $12^h$ $3^m$. **Yap** (Western Carolines). Earthquake of intensity III.

14, $23^h$ $53^m$. **Agusan Valley** (E of Mindanao). Oscillatory earthquake of intensity III–IV, perceptible throughout the valley. A repetition of intensity III occurred at $0^h$

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

$10^m$ of the 15th. These two shocks are doubtlessly identical with those registered by the Manila seismographs at $23^h$ $50^m$ $58^s$ of the 14th and $0^h$ $6^m$ $19^s$ of the 15th.

17, $16^h$ $38^m$. **Western Leyte.** Oscillatory earthquake of force II–III, lasting 6 seconds. A repetition at $5^h$ $30^m$ of the 18th developed force III–IV.

18, $4^h$ $32^m$. **Agusan Valley** (E of Mindanao). Earthquake of intensity IV and long duration, felt throughout the valley.

18, $21^h$ $35^m$ $40^s$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction E–W, duration 14 seconds, intensity IV. The shocks were preceded by subterranean noises, degree II of the Davison scale. The origin of this disturbance was underneath the Pacific Ocean, to the northeast of Aparri. It was likewise registered at Taihoku at $21^h$ $35^m$ $48^s$.

20, $1^h$ $10^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

20, $6^h$ $7^m$. **Guam** (Mariana Islands). Earthquake of intensity II–III and short duration.

21, $21^h$ $57^m$ $54^s$.* **Samar, Leyte and northeastern Mindanao.** Earthquake of intensity IV–V in central and southern Samar, northern and eastern Leyte, and of intensity III in northeastern Mindanao. Its origin lay probably near the southern coast of Samar, in the neighborhood of 125.5° longitude east and 11° latitude north. The stations of Tacloban and Guiuan which are the nearest to the epicenter, report an extraordinarily long duration; the undulations from east to west and of intensity mentioned were well marked. The disturbance has not been registered outside of the Archipelago. At $22^h$ $43^m$ occurred a repetition of intensity II–III.

23, $2^h$ $19^m$. **Southern Samar and northeastern Leyte.** Earthquake of intensity II, proceeding evidently from the same center as that of the 21st.

23, $2^h$ $57^m$ $20^s$.* **Agusan Valley** (E of Mindanao). Earthquake of intensity V–VI, felt throughout eastern and northeastern Mindanao and on Leyte Island. To judge from the intensities experienced at Butuan, which town lies near the northern end of the valley, and at Talacogon, which is some 50 kilometers south of the former place, the epicenter lay somewhat more to the north than that of the earthquakes during July, probably between the two stations mentioned. This explains why the seismic waves were perceptible toward north as far as Leyte. No shocks have, however, been reported by the stations at Davao, Cotabato, and Cagayan (Misamis), situated toward the south, southwest, and west, respectively, though these were nearer to the origin than Tacloban on Leyte Island. Within the Agusan Valley the shocks lasted about 50 seconds; they awoke sleepers, stopped clocks, and brought down some walls which had been left in a tottering condition by the preceding earthquakes. Nevertheless, the disturbance seems to have been registered only by the seismographs of Manila, Taihoku, and, possibly, of Batavia. At $21^h$ $49^m$ occurred a second earthquake of force IV, having the same epicenter, but which was not perceptible outside of Mindanao.

27, $1^h$ $50^m$. **Jolo and Zamboanga.** Earthquake of intensity III. At Jolo were observed oscillations in the direction ENE–WSW during approximately 10 seconds.

27, $21^h$ $37^m$. **Agusan Valley** (E of Mindanao). Earthquake of intensity III, felt only in the central region of the valley.

28, $8^h$ $0^m$. **Sarangani** (S of Mindanao). Earthquake of intensity II.

30, $1^h$ $44^m$. **Guam** (Mariana Islands). Earthquake of intensity IV and very short duration.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=$0.^h$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | h. m. s. | h. m. s. | h. m. s. | h. m. s. | mm. | s. | h. m. | |
| 208 | 1 | $I_d$ | V. | 12 40 22 | ---------- | 12 40 39 | 12 40 48 | 0.09 | 2.4 | 12 43 | Vertical component 0.07 mm. |
| 209 | 1 | $I_d$ | V. | 23 44 15 | ---------- | 23 44 32 | 23 45 08 | .34 | 2.4 | 23 49 | V. C. 0.11 mm. |
| 210 | 2 | I | H. WSW | ---------- | ---------- | 8 01 48 | ---------- | ------ | ------ | 8 30 | |
| 211 | 2 | $I_v$ | H. WSW | 16 34 47 | ---------- | 16 36 37 | 16 38 18 | .05 | 6 | 16 55 | Earthquake, IV, Agusan River Valley. |
| 212 | 5 | $I_v$ | V. | 10 08 48 | ---------- | 10 10 08 | 10 13 00 | .02 | 7.6 | 10 25 | Eqke., VII in the western part of Leyte. |
| | | | H. WSW | 10 08 48 | ---------- | 10 10 02 | 10 12 03 | .12 | 9.6 | 10 31 | |
| 213 | 5 | I | H. WSW | ---------- | 17 25 03 | ---------- | ---------- | ------ | ------ | 17 43 | |
| 214 | 6 | $I_r$ | V. | 9 01 04 | ---------- | 9 06 15 | 9 07 02 | .04 | 2.4 | 9 27 | V. C. 0.01 mm. |
| | | | H. NNW | 9 01 06 | ---------- | 9 06 21 | 9 06 27 | .12 | 7.2 | 9 26 | |
| | | | H. WSW | 9 01 06 | ---------- | 9 06 22 | 9 08 21 | .20 | 7.8 | 9 33 | |
| | | | W. N | 9 00 57 | ---------- | 9 06 07 | 9 07 06 | .04 | 2.8 | 9 28 | |
| | | | W. E | 9 00 57 | ---------- | 9 06 08 | 9 06 17 | .11 | 4.8 | 9 52 | |
| 215 | 6 | $I_v$ | H. WSW | 10 14 47 | ---------- | 10 16 27 | 10 17 41 | .07 | 8.1 | 10 36 | Eqke., V, Agusan River Valley. |
| 216 | 7 | $I_d$ | V. | 6 47 09 | ---------- | 6 47 33 | 6 47 41 | .05 | 2.4 | 6 50 | V. C. 0.03 mm. |
| 217 | 8 | $I_d$ | V. | 18 40 55 | ---------- | 18 41 10 | 18 41 25 | .03 | 2.4 | 18 43 | V. C. 0.02 mm. |
| 218 | 9 | $I_r$ | H. WSW | 6 52 43 | ---------- | ---------- | ---------- | ------ | ------ | 7 19 | |
| 219 | 9 | I | V. | 18 57 57 | ---------- | 19 02 58 | 19 03 04 | .04 | 2.4 | 19 12 | V. C. 0.04 mm. |
| | | | H. WSW | 18 58 02 | ---------- | 19 02 58 | 19 03 13 | .04 | 9 | 19 14 | |
| 220 | 9 | $I_d$ | V. | 19 47 21 | ---------- | 19 47 40 | 19 47 46 | .07 | 2.4 | 19 50 | V. C. 0.04 mm. |
| 221 | 10 | $I_d$ | V. | 14 51 06 | ---------- | 14 51 24 | 14 51 34 | .02 | 2 | 14 54 | V. C. 0.01 mm. |
| 222 | 11 | $I_d$ | W. E | 4 24 58 | ---------- | 4 25 34 | 4 25 56 | .01 | 3.6 | 4 27 | |
| 223 | 12 | $I_d$ | V. | 2 35 33 | ---------- | 2 35 47 | 2 35 55 | .02 | 2.4 | 2 38 | |
| 224 | 12 | $I_r$ | V. | 21 03 32 | 21 06 41 | 21 10 52 | 21 12 26 | .01 | 6 | 21 22 | |
| | | | H. WSW | 21 03 32 | 21 06 55 | 21 10 52 | 21 12 21 | .05 | 6.9 | 21 30 | |
| 225 | 14-15 | $I_v$ | V. | 23 50 58 | ---------- | ---------- | ---------- | ------ | ------ | 0 01 | Agusan Valley? |
| 226 | 15 | $I_v$ | V. | 0 06 19 | ---------- | ---------- | ---------- | ------ | ------ | 0 27 | Agusan Valley? |
| 227 | 15 | $I_r$ | H. WSW | 21 30 18 | ---------- | ---------- | ---------- | ------ | ------ | 22 15? | |
| | | | W. E | 21 30 18 | ---------- | ---------- | ---------- | ------ | ------ | 22 12? | |
| 228 | 17 | $I_r$ | V. | 11 38 49 | 11 47 42 | 11 54 32 | 12 01 27 | .01 | 12 | 12 35 | |
| | | | H. NNW | 11 38 45 | 11 47 27 | 11 54 40 | 11 59 06 | .07 | 11.4 | 12 31 | |
| 229 | 17 | $I_r$ | H. WSW | 12 43 37 | ---------- | 12 55 52 | 12 57 09 | .14 | 8.7 | 13 33 | |
| 230 | 18 | $II_v$ | V. | 21 35 40 | ---------- | 21 37 07 | 21 37 50 | .84 | 2.4 | 22 07 | V. C. 0.07 mm. Eqke., IV at Aparri (NE of Luzon). |
| | | | W. E | 21 35 40 | ---------- | 21 36 50 | 21 39 25 | .97 | 3.6 | 22 09 | |
| 231 | 20 | $I_d$ | V. | 13 35 26 | ---------- | 13 35 44 | 13 36 04 | .16 | 2.4 | 13 40 | V. C. 0.07 mm. |
| 232 | 21 | I | V. | 15 22 25 | ---------- | ---------- | ---------- | ------ | ------ | 15 54 | |
| | | | H. WSW | 15 22 26 | ---------- | ---------- | ---------- | ------ | ------ | 16 20 | |
| 233 | 21 | $I_v$ | V. | 21 57 54 | ---------- | 21 59 12 | 21 59 56 | .05 | 2.4 | 22 06 | V. C. 0.01 mm. Samar, Leyte and NE of Mindanao. |
| | | | W. E | 21 57 54 | ---------- | 21 59 00 | 21 59 24 | .03 | 4 | 22 06 | |
| 234 | 22 | I | W. E | 13 13 30 | ---------- | ---------- | ---------- | ------ | ------ | 13 38 | |
| 235 | 24 | $II_d$ | V. | 6 45 18 | ---------- | 6 45 37 | 6 46 23 | 1.18 | 2.4 | 6 51 | V. C. 0.99 mm. |
| 236 | 24 | $I_d$ | V. | 11 57 13 | ---------- | 11 57 55 | 11 58 09 | .06 | 2.4 | 12 26 | V. C. 0.01 mm. |
| 237 | 25 | $I_v$ | W. E | 2 57 20 | ---------- | 2 58 30 | 2 59 37 | .05 | 4 | 3 22 | Eqke., V-IV, Agusan River Valley. |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8.1 seconds; WSW–ENE pendulum, T=8.7 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, $3^h$ $21^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad III.

1, $8^h$ $38^m$. **Laoag** (NW de Luzón). Temblor oscilatorio, intensidad III.

2, $16^h$ $34^m$ $47^s$.* **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad IV, larga duración. Perceptible en gran parte del Valle, en una extensión de más de 100 kilómetros en la dirección N–S. Repitió á $17^h$ $30^m$ con intensidad III en el centro del Valle.

3, $6^h$ $37^m$. **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad IV. Á $18^h$ $58^m$ repetición de intensidad II–III en el centro del Valle.

5, $10^h$ $08^m$ $48^s$.* **W De Leyte.** Temblor de tierra de intensidad VII, en toda la costa occidental, desde el paralelo 11° N al 10° 20′ N, y en las Islas Camotes que se hallan al W á unos 35 kilómetros de distancia: el epicentro parece estar entre estas islas y la costa W de Leyte.

6, $10^h$ $14^m$ $47^s$.* **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad V, sentido en todo el Valle, duración 45 segundos.

6, $21^h$ $20^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

7, $20^h$ $02^m$. **Catbalogan** (W de Sámar). Temblor de tierra de intensidad III.

8, $4^h$ $57^m$. **W De Leyte.** Temblor oscilatorio de intensidad IV, duración 18 segundos. Originado sin duda en el mismo lugar que el del día 5. Repitió con intensidad III á $0^h$ $13^m$ del día 9.

10, $6^h$ $13^m$. **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad III, sentido solamente en el centro del Valle.

11, $17^h$ $36^m$. **Vigan** (NW de Luzón). Temblor oscilatorio, dirección SE–NW, intensidad II–III, duración 4 segundos.

12, $3^h$ $05^m$. **W De Leyte.** Temblor oscilatorio de intensidad III–IV, sentido en gran parte de la isla y en las Camotes. Repitió con menos intensidad á $14^h$ $38^m$ y $18^h$ $57^m$: estas repeticiones fueron solamente perceptibles á lo largo de la costa occidental entre los 11° y 10° 20′ latitud N.

13, $23^h$ $35^m$. **Isla de Romblón.** Temblor oscilatorio, dirección SW–NE, intensidad II–III, duración 2 segundos.

14, $12^h$ $03^m$. **Yap** (Carolinas Occidentales). Temblor de tierra de intensidad III.

14, $23^h$ $53^m$. **Valle del Agusan** (E de Mindanao). Temblor oscilatorio de intensidad III–IV sentido en todo el Valle. Repitió con intensidad III á $0^h$ $10^m$ del 15. Estos dos temblores son sin duda los registrados por los seismógrafos de Manila á $23^h$ $50^m$ $58^s$ del 14 y á $0^h$ $06^m$ $19^s$ del 15.

17, $16^h$ $38^m$. **W De Leyte.** Temblor oscilatorio de intensidad II–III, duración 6 segundos. Repitió á $5^h$ $30^m$ del 18 con intensidad III–IV.

18, $4^h$ $32^m$. **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad IV, sentido en todo el Valle; larga duración.

18, $21^h$ $35^m$ $40^s$.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E–W, intensidad IV, duración 14 segundos. Precedido de ruido subterráneo; grado II de Davison. El origen de este temblor se hallaba sin duda en el Pacífico al NE de Aparri; registróse en Taihoku á $21^h$ $35^m$ $48^s$.

20, $1^h$ $10^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

20, $6^h$ $07^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad II–III, corta duración.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

21, 21$^h$ 57$^m$ 54$^s$.* **Sámar, Leyte y NE de Mindanao.** Temblor de tierra de intensidad IV–V en la parte Central y S de Sámar, N y E de Leyte; de intensidad III en el NE de Mindanao. Su origen estaba probablemente cerca de la costa S de Sámar hacia los 125.5° E y 11° N. En las estaciones de Tacloban y Guiuan que son las más próximas al epicentro, fué el terremoto de una duración extraordinariamente larga; observáronse bien ondulaciones en la dirección E–W de la intensidad antes indicada. No se registró fuera del Archipiélago. Á 22$^h$ 43$^m$ hubo una repetición de intensidad II–III.

23, 2$^h$ 19$^m$. **S de Sámar y NE de Leyte.** Temblor de tierra de intensidad II, procedente sin duda del epicentro del día 21.

25, 2$^h$ 57$^m$ 20$^s$.* **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad V–VI sentido en toda la parte E y NE de Mindanao y en la isla de Leyte. Á juzgar por la intensidad que tuvo en Butúan, que está cerca del extremo N del Valle y en Talacogon, que se halla unos 50 kilómetros más al S, su epicentro se hallaba algo más al N que en los terremotos de Julio, probablemente entre las dos citadas estaciones. De aquí que sus ondas se extendiesen por el N hasta Leyte, Empero ningún report se ha recibido de Dávao, Cotabato y Cagayán, estaciones situadas al S, SW y W, á menor distancia que Tacloban, en la isla de Leyte. Dentro del Valle del Agusan duró unos 50 segundos, despertó á los dormidos, paró relojes y derrumbó algunas paredes quebrantadas por los anteriores temblores. No parece sin embargo que lo hayan registrado más que los seismógrafos de Manila, Taihoku y tal vez los de Batavia. Á 21$^h$ 49$^m$ tuvo lugar en el mismo epicentro un segundo temblor de intensidad IV; el cual no fué perceptible fuera de la isla de Mindanao.

27, 1$^h$ 50$^m$. **Joló y Zamboanga.** Temblor de tierra de intensidad III. En Joló se notaron oscilaciones en dirección ENE–WSW durante unos 10 segundos.

27, 21$^h$ 37$^m$. **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad III, sentido solamente en el centro del Valle.

28, 8$^h$ 00$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad II.

30, 1$^h$ 44$^m$. **Guam** (Islas Marianas). Temblor de tierra de intensidad IV, duración muy corta.

## REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# BULLETIN FOR OCTOBER, 1911.

# METEOROLOGICAL BULLETIN FOR OCTOBER, 1911.

By Rev. JOSÉ CORONAS, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—The monthly mean of atmospheric pressure exceeded the mean for October, 1910, and likewise the normal mean for the month at all the meteorological stations in the Philippines. This was to be expected in view of the total absence of atmospheric disturbances in the neighborhood of the Philippines throughout the entire month. At Manila, the pressure differed from the normal mean for October by +1.70 millimeters and from the mean for the corresponding month of the preceding year by +1.10 millimeters.

The mean temperature differed, in general, very little from that of October of last year. At Manila, the departure from the normal for the month was —0.7°C.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR OCTOBER, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from Oct., 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from Oct., 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Tagbilaran | 759.55 | ---------- | 761.15 | 28 | 758.43 | 20 | ---------- | ---------- | ---------- | ---------- | ---------- | ---------- |
| Cebu | 59.52 | +1.03 | 61.22 | 28 | 58.33 | 13 | 26.9 | +0.4 | 33.1 | 1 | 21.4 | 24 |
| Iloilo | 59.73 | + .83 | 61.46 | 28 | 58.50 | 13 | 26.7 | 0 | 32.7 | 2, 16 | 21.9 | 24 |
| Ormoc | 59.81 | +1.20 | 61.60 | 28 | 58.46 | 12 | 25.6 | + .3 | 32.1 | 6, 7,<br>26, 28 | 19.4 | 24, 26 |
| Tacloban | 59.89 | + .84 | 61.76 | 28 | 58.28 | 12 | 26.8 | + .2 | 34.3 | 16 | 22.5 | 28 |
| Capiz | 60 | +1.05 | 61.92 | 28 | 58.48 | 13 | 26.8 | + .3 | 34.4 | 1 | 21.7 | 2 |
| Calbayog | 59.90 | +1.27 | 61.69 | 28 | 58.25 | 12 | 26 | 0 | 33.2 | 5, 17 | 20 | 24 |
| Legaspi | 60.09 | +1.27 | 61.99 | 28 | 58.46 | 12 | 27.7 | +1.2 | 35.2 | 11 | 19.4 | 23 |
| Atimonan | 60.38 | +1.23 | 62.16 | 28 | 57.76 | 1 | 27.1 | + .2 | 34.1 | 1 | 21.7 | 28 |
| Paracale | 60.54 | +1.43 | 62.48 | 28 | 57.90 | 1 | 26.9 | ---------- | 33.6 | 1 | 21.5 | 26 |
| Manila | 60.37 | +1.10 | 62.30 | 28 | 57.80 | 1 | 26.1 | + .2 | 33.5 | 14 | 19.9 | 22 |
| San Isidro | 60.51 | +1.47 | 62.38 | 28 | 57.82 | 1 | 26.6 | + .2 | 34 | 12, 14 | 20.5 | 22 |
| Dagupan | 60.04 | +1.14 | 61.85 | 28 | 57.27 | 1 | 27.4 | 0 | 35.2 | 11 | 21.4 | 22 |
| Baguio[1] | 637.72 | + .87 | 639.16 | 28 | 634.90 | 1 | 17.9 | — .2 | 24.4 | 10 | 13.9 | 20 |
| Vigan | 759.99 | +1.01 | 761.94 | 28 | 756.22 | 1 | [2]26.9 | — .1 | 34.7 | 18 | 20.5 | 27 |
| Tuguegarao | 60.90 | +1.12 | 63.05 | 18 | 55.88 | 1 | 25.8 | — .1 | 35.3 | 2 | 18.4 | 22 |
| Aparri | 60.99 | + .77 | 63.32 | 18 | 55.51 | 1 | 25.6 | — .4 | 33.9 | 10 | 20.6 | 22, 25 |

[1] The barometric readings of this station are not reduced to sea level.

[2] 29 days of observation.

**Precipitation.**—Owing to the aforesaid absence of atmospheric disturbances, the month of October was for a large portion of the Archipelago the beginning of a period of drought which lasted several months, as we shall see in the corresponding bulletins. The greater number of stations report for October a total rainfall considerably below the amount for the same month of 1910, as is shown in the following table. The pluviometers at the Central Observatory measured a rainfall of only 9.7 millimeters which amount is 179.3 millimeters short of the normal amount for October, and 235.7 millimeters of the total for the same month of 1910. The records of this Observatory show that, as far as concerns Manila, this year's total of 9.7 millimeters is the absolute minimum for October during the long period of 47 years, from 1865 to 1911.

### RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF OCTOBER, 1911.

| Station. | Total. | Departure from Oct., 1910. | Rainy days. | Departure from Oct., 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from Oct., 1910. | Rainy days. | Departure from Oct., 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 189.8 | —113.4 | 12 | 0 | 48.8 | 15 | Gubat | 176.6 | -------- | 14 | ------ | 58.2 | 18 |
| Isabela, Basilan | 275.8 | + 60.2 | 12 | — 5 | 59.2 | 20 | Legaspi | 94.4 | —326.1 | 7 | —14 | 36.3 | 18 |
| Zamboanga | 17.4 | —120.2 | 7 | — 7 | 4.8 | 19 | Sumay, Guam | 451.5 | +131.8 | 21 | — 3 | 78.7 | 19 |
| Davao | 259.1 | + 36.6 | 15 | + 2 | 87.1 | 10 | Calapan | 146.3 | —229.5 | 18 | — 5 | 39.1 | 15 |
| Cagayan, Misamis | 53.4 | -------- | 10 | ------ | 17.8 | 21 | Virac | 74.6 | —258.8 | 16 | — 7 | 39.6 | 17 |
| Butuan | 105.2 | — 42.2 | 18 | — 2 | 32.5 | 20 | Nueva Caceres | 45.1 | —218.3 | 7 | — 9 | 27.7 | 6 |
| Dumaguete | 185.1 | — 24.1 | 12 | — 5 | 46.2 | 7 | Batangas | 5.5 | —207.8 | 8 | — 9 | 1.3 | 16 |
| Yap, Western Carolines | 296.6 | + 93.1 | 27 | + 6 | 84.6 | 18 | Atimonan | 169.9 | – 268 | 23 | 0 | 22.4 | 18 |
| Tagbilaran | 254.6 | +110 | 10 | — 8 | 76.7 | 19 | Silang | 81.9 | —308.4 | 5 | —10 | 39.9 | 2 |
| Surigao | 255.8 | + 39.1 | 20 | + 8 | 64 | 19 | Paracale | 338.3 | —236.3 | 20 | — 3 | 82.3 | 15 |
| Maasin | 234.8 | —200.1 | 8 | — 3 | 65.8 | 17 | Manila | 9.7 | —235.7 | 6 | —16 | 3.8 | 23 |
| Cebu | 110.2 | —274 | 12 | — 8 | 55.9 | 7 | Antipolo | 87.5 | — 77.1 | 10 | — 9 | 44.4 | 15 |
| Iloilo | 92.5 | — 77 | 11 | — 7 | 39.9 | 19 | Iba | 121.8 | — 53.6 | 6 | — 8 | 79.5 | 1 |
| San Jose Buenavista | 109 | —125 | 13 | — 3 | 51.3 | 6 | San Isidro | 58.4 | + 3.5 | 9 | 0 | 29 | 14 |
| Cuyo | 59.1 | —278.4 | 7 | —11 | 14.7 | 13 | Tarlac | 46.3 | — 27 | 4 | — 6 | 25.6 | 1 |
| Ormoc | 142.6 | —141.9 | 21 | — 3 | 30.8 | 18 | Baler | 295.3 | -------- | 18 | ------ | 54.6 | 5 |
| Guiuan | 259.4 | -------- | 21 | ------ | 46.4 | 18 | Dagupan | 137.5 | + 32.4 | 6 | — 6 | 39.6 | 25 |
| Tacloban | 184.4 | —136.3 | 20 | 0 | 47.3 | 18 | Baguio | 144.6 | — 83.3 | 15 | — 6 | 46.5 | 1 |
| Capiz | 154.2 | —237.5 | 16 | — 9 | 42.7 | 14 | Echagüe | 137.6 | — 21.8 | 12 | — 7 | 49.8 | 6 |
| Borongan | 436.8 | — 48.6 | 22 | — 1 | 153.1 | 18 | Vigan | 54.1 | — 28.3 | 2 | — 5 | 53.6 | 1 |
| Calbayog | 152.8 | —189.7 | 20 | — 3 | 37.3 | 8 | Tuguegarao | 21.6 | — 73.2 | 5 | — 5 | 10.7 | 5 |
| Masbate[1] | 45.4 | -------- | 6 | ------ | 19.6 | 12 | Laoag[2] | 11.5 | — 75 | 1 | — 5 | 11.5 | 1 |
| Romblon | 176.3 | -------- | 14 | ------ | 115.6 | 29 | Aparri | 280 | — 5.8 | 13 | — 4 | 136.3 | 16 |
| Laoang | 318.7 | -------- | 18 | ------ | 75.7 | 18 | Santo Domingo, Batanes | 125.2 | — 8.6 | 18 | + 8 | 25.4 | 28 |

[1] 28 days of observation.

[2] 30 days of observation.

## DEPRESSIONS AND TYPHOONS.

As has been stated, this month was entirely devoid of atmospheric disturbances in the vicinity of the Philippines. The same can not, however, be said regarding Japan and the Ladrone or Mariana group of islands, as will be evident from the following brief account of two typhoons, whose approximate tracks are shown on Plate XIV.

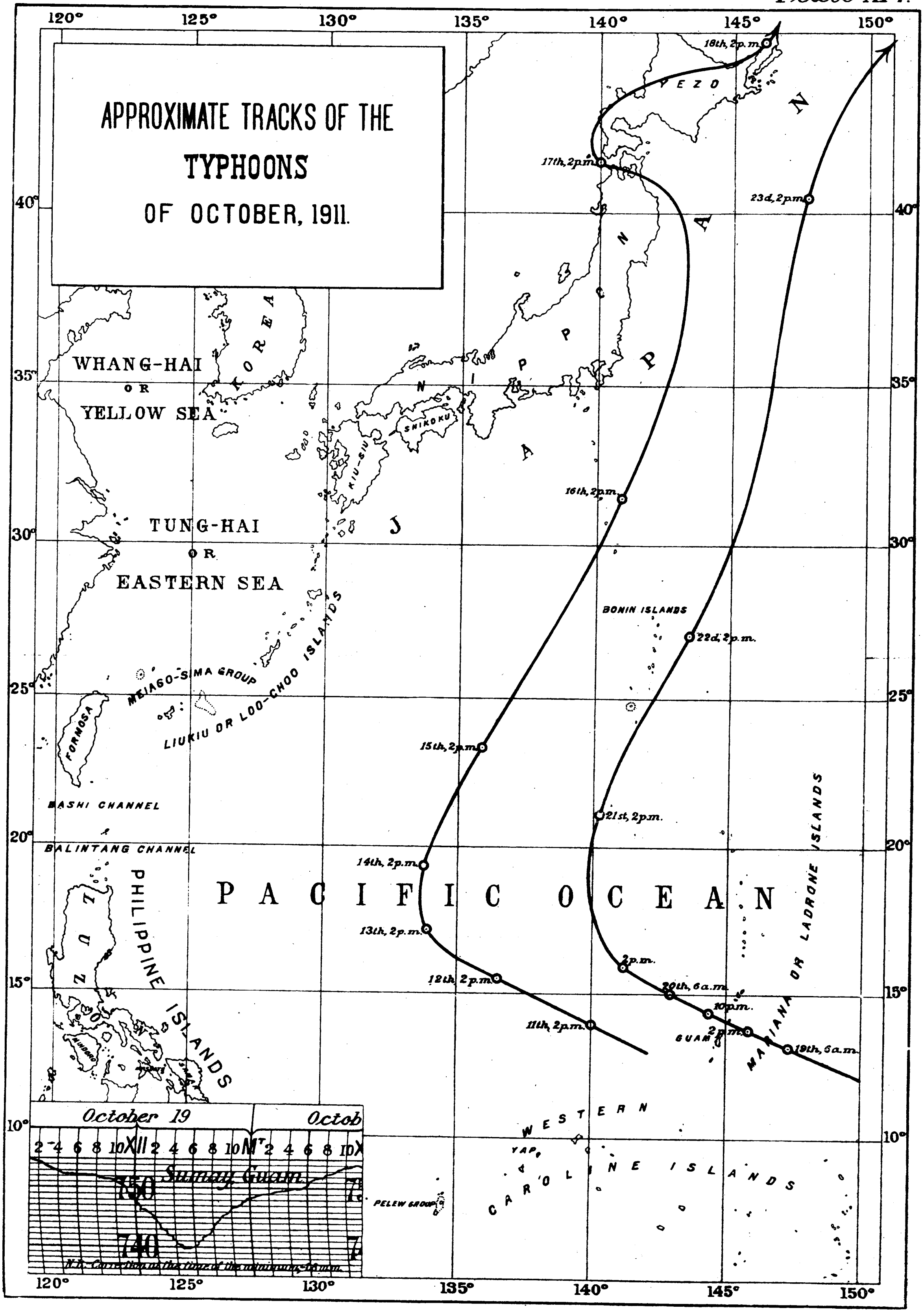
### THE TYPHOON OF OCTOBER 11 TO 18, 1911.

Manila Observatory announced this typhoon during the afternoon of October 11 as situated to the west of Guam. The observations of Guam as well as those of Yap seem to make it quite probable that the storm formed west of the southern Marianas, whence it traveled toward west-northwest until the morning of the 13th. During that day and the following night it recurved completely toward northwest, north and north-northeast, the latter direction being clearly maintained from the 14th to the 16th, both days included. The last portion of the track which is, no doubt, decidedly irregular, has been traced with the aid of the three daily weather maps of the Japanese meteorological service. According to these, the typhoon turned again toward west-northwest in the morning of the 17th, while crossing the northernmost part of Nippon Island. But soon it recurved once more toward north, northeast, and even east-northeast, following the last-named direction while traversing Yezo Island during the night of the 17th to the 18th, and the forenoon of the latter. We do not know the barometric minimum observed in Japan during the passage of this storm, but the indications of the weather maps for the 17th justify the assertion that it was below 744 millimeters.

### THE TYPHOON OF THE MARIANAS, OCTOBER 19 TO 23, 1911.

This typhoon has the distinction of having passed closer to Guam and, consequently, made itself felt on that island with greater force, than any other storm during the year 1911. The observations made there on this occasion and contained in the following table will presumably be of special interest to our readers as without them, as far as we know, no other observatory in the Far East has thus far been able to trace with any

*Plate XIV.*



APPROXIMATE TRACKS OF THE TYPHOONS OF OCTOBER, 1911.

degree of reliability the first portion of the path of this typhoon. Since the storm, after recurving west of the Mariana Islands, advanced toward north-northeast and passed very close to the Bonin group, we give in the same table also the observations made at the Japanese station on Chichijima, Bonin Islands. The observations of these two stations, taken together with the Japanese weather maps for the 23d, furnished sufficient data for tracing with considerable approximation the track of this typhoon from the 19th to the 23d, both dates included. (Plate XIV.)

METEOROLOGICAL OBSERVATIONS FOR OCTOBER 19 TO 23, 1911.

| Sumay, Guam, Ladrone Islands. | | | | | |
|---|---|---|---|---|---|
| Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfall (daily total). |
| | | | Direction. | Force. | |
| | *mm.* | *mm.* | | *0-12.* | *mm.* |
| October 19: | | | | | |
| 6 a. m | 751.30 | — 7.70 | NNW | 8 | ------ |
| 10 a m | 49.50 | — 8.80 | N | 8 | ------ |
| Noon | 46.19 | —10.01 | N | 9 | ------ |
| 1 p. m | 44.29 | —11.61 | NNW | 9 | ------ |
| 2 p. m | 41.79 | —13.61 | NW | 10 | ------ |
| 3.30 p. m | 39.07 | —16.03 | WNW | 10 | ------ |
| 5 p. m | 37.97 | —17.23 | W | 10 | ------ |
| 6 p. m | 39.46 | —16.04 | W | 10 | ------ |
| 7.30 p. m | 41.54 | —14.16 | WSW | 9 | 78.7 |
| October 20: | | | | | |
| 6 a. m | 51.30 | 0 | S | 8 | ------ |
| 10 a. m | 53.35 | + 3.85 | SSW | 6 | ------ |
| 2 p. m | 52.47 | +10.68 | S | 5 | 58.4 |
| October 21: | | | | | |
| 6 a. m | 56.95 | + 5.65 | S | 5 | ------ |
| 2 p. m | 56.88 | + 4.41 | S | 5 | 2.5 |

| Chichijima, Bonin Islands. | | | | |
|---|---|---|---|---|
| Date and hour. | Pressure. | Difference in 24 hours. | Wind. | |
| | | | Direction. | Force. |
| | *mm.* | *mm.* | | *0-12.* |
| October 20: | | | | |
| 6 a. m | 761 | — 1 | NE | 2 |
| 2 p. m | 59 | — 2.5 | NE | 2 |
| 10 p. m | ------ | ------ | NE | 2 |
| October 21: | | | | |
| 6 a. m | 59 | — 2 | NE | 2 |
| 2 p. m | 56.5 | — 2.5 | NE | 3 |
| 10 p. m | ------ | ------ | NNE | 2 |
| October 22: | | | | |
| 6 a. m | 47 | —12 | N | 3 |
| 2 p. m | 39 | —17.5 | NNW | 7 |
| 10 p. m | ------ | ------ | N | 4 |
| October 23: | | | | |
| 6 a. m | 54 | + 7 | NW | 3 |

N. B.—The barometric readings for Chichijima are published, as they have been received, corrected for gravity; those of Guam are not corrected for gravity.

We are unable to state whether this typhoon originated near the Mariana Islands or came, already developed, from a distance. It is certain that the vortex could be very clearly located to the EbyS of Guam during the night of the 18th to 19th, having then a west-northwest direction. Though Mr. H. Taylor, the observer in charge of the station on Guam, did not begin to make extraordinary observations until the morning of the 19th, he informed us that ever since midnight a gale had been blowing from NbyW.

Violent winds continued to blow during the whole forenoon of the 19th and increased in force during the afternoon, while gradually backing to northwest, west-northwest, and west. The lowest barometer, 737.97 millimeters, was observed at 5 p. m. of the 19th, with winds from west. This indicates that during the said afternoon the vortex passed north of Guam and very close to it, on a west-northwest course.

Together with his observations, Mr. Taylor sent the following note:

> Little damage was done by this typhoon. The U. S. S. *Supply* and a Japanese schooner rode it out at anchor. A few telephone poles and small trees were blown down, but no other damage to property is reported. Our anemometer broke down, but we estimated the force of the wind in squalls to be about 80 miles (129 kilometers) an hour. The wireless station which is in a very exposed position claims to have a good anemometer record of 108 miles (174 kilometers) per hour.

The typhoon did probably not begin to recurve until the afternoon of the 20th. On the 21st it had already a north-northeasterly direction, and during the afternoon of the 22d it reached its least distance from Chichijima, Bonin Islands, where the barometer had fallen to 740 millimeters (739 millimeters, if corrected for gravity) at 2 p. m. In the morning and afternoon of the 23d the storm could still be followed, being then to the east of Japan, but having a more northerly direction than during the two preceding days.

The following typhoon warnings were cabled by Manila Observatory to Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

October 19, 8.45 a. m.: Typhoon east-southeast of Guam, direction unknown.

October 19, 11.45 a. m.: Typhoon east-southeast of Guam, moving west or west-northwest.

October 19, 7.15 p. m.: Typhoon near or over Guam, moving west or westnorthwest.

October 20, 8.00 a. m.: Typhoon west of the southern Ladrone or Mariana Islands, moving west or west-northwest.

October 21, 7.00 a. m.: Typhoon west of the Ladrone or Mariana Islands, moving west-northwest or northwest.

October 22, 11.10 a. m.: Typhoon southeast of the Bonin Islands, moving north-northeast or northeast.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—La media mensual de la presión atmosférica es para todas nuestras estaciones de Filipinas mayor que la de Octubre, 1910, y mayor también que la normal de Octubre. Así era de esperar dada la ausencia absoluta que ha habido de perturbaciones atmosféricas en las proximidades del Archipiélago. La de Manila se diferencia en +1.70 mm. de la normal de Octubre, y en +1.10 mm. de la media mensual de Octubre del año pasado.

La media mensual de la temperatura se diferencia en general muy ligeramente de la del año anterior. La de Manila difiere de la normal de este mes en —0.7°C.

**Precipitación acuosa.**—Con la ausencia de perturbaciones atmosféricas en Filipinas que acabamos de indicar empezó este mes para una gran parte de nuestro Archipiélago un período de sequía que se ha prolongado por varios meses según iremos viendo en los boletines correspondientes. La mayoría de las estaciones dan un total de lluvia bastante inferior al de Octubre del año pasado, como verán nuestros lectores en la tabla que acompaña el texto inglés. En los pluviómetros de Manila no se recogieron más de 9.7 mm. de agua, cantidad inferior á la normal de Octubre en 179.3 mm. y al total del año pasado en 235.7 mm. Esta cantidad mensual de 9.7 mm. es la mínima que se ha observado en Manila en el largo período de 47 años (1865–1911), según consta de los registros de este Observatorio.

## DEPRESIONES Y TIFONES.

Como queda ya indicado, se distinguió este mes por la ausencia de perturbaciones atmosféricas en los alrededores de Filipinas. Sin embargo, no puede decirse lo mismo con respecto al Japón y á las Islas Ladrones ó Marianas, según se verá por los dos tifones de que vamos á hablar brevemente. Véanse sus trayectorias aproximadas en la lámina XIV.

### TIFÓN DE 11 Á 18 DE OCTUBRE, 1911.

El Observatorio anunció este tifón la tarde del día 11, situándolo al W de Guam. Y efectivamente tanto las observaciones de Guam como las de Yap parecen indicar con bastante probabilidad que se formó el tifón al W de la parte meridional de las Islas Marianas y que se movió al WNW hasta la mañana del 13 próximamente. Durante el día 13 y la noche del 13 al 14 verificó una completa recurva al NW, N y NNE, siguiendo decididamente su marcha al NNE desde el 14 al 16 ambos inclusive. La última parte de la trayectoria, por cierto muy irregular, se ha trazado teniendo á la vista los tres mapas diarios del Japón. Según ellos, el tifón volvió á dirigirse al WNW la mañana del 17 á través de la parte más septentrional de la Isla Nippon: pero pronto recurvó de nuevo al N, NE y aun ENE, atravesando en esta última dirección la Isla Yezo durante la noche del 17 al 18 y mañana del 18. No nos consta la mínima barométrica observada en Japón durante este tifón; pero por las indicaciones de los mapas del tiempo del día 17 se puede asegurar que fué menor de 744 mm.

### EL TIFÓN DE MARIANAS, 19 Á 23 DE OCTUBRE, 1911.

Este tifón es el que ha pasado más cerca de Guam y ha desfogado allí con más violencia durante el presente año 1911. Las observaciones hechas en aquella estación (véanse en el texto inglés) estamos seguros han de ser de especial interés para nuestros lectores, toda vez que por falta de ellas ningún otro Observatorio del Extremo Oriente ha podido hasta el presente, que sepamos, trazar con precisión la primera parte de la trayectoria de este baguio. Y como quiera que después de recurvar al W de las Islas Marianas, se dirigió el tifón al NNE y vino á pasar muy cerca de las Islas Bonín, en la misma tabla en que publicamos las observaciones de Guam hemos incluído las de la estación japonesa de Chichijima, Islas Bonín. Estas observaciones de ambas estaciones y los mapas de tiempo del Japón del día 23 han sido suficientes para trazar con bastante aproximación la trayectoria de este tifón desde el 19 al 23 ambos inclusive (lámina XIV).

No sabemos si se formó este tifón cerca de las Islas Marianas, ó si vino formado de más lejos. Lo cierto es que la noche del 18 al 19 se podía situar muy bien el vórtice hacia el E¼SE de Guam moviéndose al WNW. El observador de aquella estación, Mr. H. Taylor, aunque no empezó á hacer observaciones extraordinarias hasta la mañana del día 19, con todo, refiriéndose á lo observado ya durante la noche anterior, nos dijo que desde media noche habían soplado vientos violentos del N¼NW.

Estos vientos continuaron soplando con violencia toda la mañana del día 19, y aumentaron aún más en fuerza por la tarde al propio tiempo que fueron rolando gradualmente al NW, WNW y W. La mínima barométrica fué 737.97 mm. y se observó á 5 p. m. del mismo día 19 con vientos del W. Tenemos, pues, que el vórtice pasó aquella tarde muy cerca y por el norte de Guam, moviéndose al WNW.

Mr. Taylor nos envió, juntamente con sus observaciones, la siguiente nota referente á los efectos de este tifón:

> Poco daño causó este tifón. Solamente se cayeron algunos árboles pequeños y unos pocos postes del teléfono. Nuestro anemómetro se rompió; pero calculamos que la fuerza del viento en los chubascos llegaría á 80 millas (129 kilómetros) por hora. La estación de telegrafía sin hilos que está en una posición bien libre de todo obstáculo sostiene que se obtuvo allí un buen registro anemométrico de 108 millas (174 kilómetros) por hora.

Probablemente no fué hasta la tarde del 20 que el baguio comenzó á recurvar. El 21 se movía ya al NNE, y la tarde del 22 pasó á la menor distancia de Chichijima, Islas Bonín, en donde había bajado el barómetro á las 2 p. m. á 740 mm. (739 mm., aplicada la corrección por gravedad). La mañana y tarde del 23 todavía se podía distinguir este tifón al E de Japón, pero moviéndose más inclinado al N que los dos días anteriores.

El Observatorio de Manila remitió los siguientes avisos de tifón á Tokyo, Zikawei, Taihoku, Hongkong y Phulien:

Día 19, 8.45 a. m.: Tifón al ESE de Guam, dirección desconocida.
Día 19, 11.45 a. m.: Tifón al ESE de Guam, moviéndose al W ó WNW.
Día 19, 7.15 p. m.: Tifón en, ó cerca de, Guam, moviéndose al W ó WNW.
Día 20, 8 a. m.: Tifón al W de la parte sur de las Islas Marianas moviéndose al W ó WNW.
Día 21, 7 a. m.: Tifón al W de las Islas Ladrones ó Marianas, moviéndose al WNW ó NW.
Día 22, 11.10 a. m.: Tifón al SE de las Islas Bonín, ~~moviéndose al~~ NNE ó NE.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[$\phi$=14° 34′ 41″ N; $\lambda$=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] |  |  | Underground temperature. |  |  |  |  |  | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. | 0.25 meter. |  | 0.50 meter. |  | 1.50 meters. | 2.50 meters. |  |  | Free exposure, total. | Shelter, total. |
|  |  |  |  |  | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. |  |  |  |  |
|  | mm. | °C. | °C. | °C. | °C. | °C. | °C. | °C. | °C. | °C. | Per ct. | mm. | mm. | mm. |
| 1 | 757.80 | 27.6 | 32.7 | 23.8 | 27.1 | 28.6 | 27.6 | 27.8 | 28.5 | 28.6 | 79.8 | 21.8 | 3.4 | 2.6 |
| 2 | 59.89 | 27.2 | 33.4 | 23.4 | 27 7 | 29.1 | 27.9 | 28.1 | 28.4 | 28.7 | 79.9 | 21 | 3.4 | 2.7 |
| 3 | 59.96 | 26.5 | 32.9 | 22.1 | 27.9 | 29.2 | 28.3 | 28.3 | 28.3 | 28.6 | 82 | 20.9 | 3 | 2.3 |
| 4 | 59.06 | 27.6 | 33.1 | 23 | 28.3 | 29.9 | 28.6 | 28.7 | 28.4 | 28.7 | 80.3 | 21.7 | 3.8 | 2.8 |
| 5 | 58.92 | 27.3 | 32.3 | 23.5 | 28.7 | 30 | 28.9 | 29 | 28.5 | 28.7 | 83.4 | 22.2 | 3.1 | 2.4 |
| 6 | 59.27 | 27.2 | 32.9 | 24.3 | 28.7 | 30.2 | 29 | 29.1 | 28.4 | 28.6 | 83.6 | 22.1 | 2.8 | 2.1 |
| 7 | 59.96 | 26.6 | 32.9 | 22.7 | 28.5 | 29.9 | 29 | 28.9 | 28.3 | 28.6 | 85.3 | 21.9 | 2.4 | 1.9 |
| 8 | 60.60 | 26.4 | 32.5 | 21.5 | 28.1 | 29.8 | 28.9 | 29.1 | 28.3 | 28.6 | 79.7 | 20.2 | 3.1 | 2.3 |
| 9 | 60.59 | 26.5 | 33.2 | 21.4 | 28.2 | 30 | 29 | 29.1 | 28.3 | 28.6 | 78.2 | 19.9 | 3.8 | 2.6 |
| 10 | 59.93 | 26.6 | 33.4 | 23.2 | 28.1 | 29.4 | 29 | 29.1 | 28.3 | 28.6 | 78.6 | 20.2 | 3.4 | 2.6 |
| 11 | 59.35 | 26.7 | 33 | 22.1 | 27.9 | 29.3 | 28.8 | 29 | 28.4 | 28.6 | 80.1 | 20.6 | 3.1 | 2.2 |
| 12 | 59.10 | 26.6 | 32.7 | 23.4 | 28.1 | 29.8 | 28.9 | 29 | 28.3 | 28.5 | 82.9 | 21.4 | 2.1 | 2.2 |
| 13 | 59.31 | 25.5 | 29.8 | 23.7 | 28.2 | 28.6 | 28.9 | 29 | 28.3 | 28.4 | 90.1 | 21.8 | .8 | .9 |
| 14 | 59.20 | 26.5 | 33.5 | 22.8 | 27.7 | 29.5 | 27 6 | 29 | 28.3 | 28.5 | 82.4 | 21 | 3.2 | 2.4 |
| 15 | 59.31 | 25.8 | 31.7 | 22.2 | 28 | 29.5 | 28.7 | 29 | 28.3 | 28.5 | 84.7 | 20.9 | 3 | 2 |
| 16 | 59.54 | 26.1 | 31.3 | 23.2 | 28 | 29 | 28.9 | 29 | 28.4 | 28.5 | 86.5 | 21.7 | 1.9 | 1.4 |
| 17 | 60 07 | 26.2 | 32.9 | 22.4 | 27.8 | 29.2 | 28.8 | 29 | 28.3 | 28.6 | 84.4 | 21.2 | 2.1 | 1.9 |
| 18 | 61.34 | 25.2 | 29.7 | 23 | 28 | 28.5 | 28.8 | 28.8 | 28.3 | 28.6 | 85.2 | 20.2 | 1.1 | 1.1 |
| 19 | 60.65 | 25.5 | 32 | 21.8 | 27.1 | 28.7 | 28.4 | 28.7 | 28.4 | 28.5 | 81.8 | 19.6 | 3.3 | 2.5 |
| 20 | 60.14 | 25.5 | 32.2 | 20.7 | 27.1 | 28.3 | 28.3 | 28.5 | 28.4 | 28.5 | 78.5 | 18.9 | 3.5 | 2.5 |
| 21 | 60.74 | 25.3 | 31.5 | 21.6 | 27.1 | 28.4 | 28.3 | 28.5 | 28.4 | 28.6 | 78.4 | 18.6 | 2.4 | 2.1 |
| 22 | 61.55 | 25 | 31.3 | 19.9 | 26.8 | 28 | 28 | 28.3 | 28.3 | 28.4 | 77.7 | 18.1 | 2.8 | 2.2 |
| 23 | 61.82 | 24.1 | 30.2 | 21.3 | 26.8 | 27.7 | 28 | 28.2 | 28.3 | 28.5 | 86.9 | 19.3 | .9 | 1 |
| 24 | 61.59 | 25.1 | 31.1 | 20.8 | 26 6 | 28 | 27.8 | 28 | 28.2 | 28.4 | 84.1 | 19.8 | 2.5 | 1.9 |
| 25 | 61.65 | 25.6 | 32.3 | 22.3 | 26.8 | 29.5 | 27.8 | 28.3 | 28.3 | 28.5 | 82.6 | 20 | 2.6 | 2.1 |
| 26 | 61.60 | 25.5 | 32.4 | 20.1 | 26.9 | 28 6 | 28 | 28.3 | 28.2 | 28.5 | 77.8 | 18.7 | 3.7 | 2.6 |
| 27 | 61.81 | 26 | 32.5 | 20.7 | 27 | 28.9 | 28.1 | 28.3 | 28.2 | 28.5 | 76.9 | 19 | 3.8 | 2.9 |
| 28 | 62.30 | 25.6 | 32.2 | 20 | 27 | 28.8 | 28.1 | 28.4 | 28.2 | 28.5 | 75 | 18.2 | 3.5 | 2.8 |
| 29 | 61.84 | 25.8 | 31.1 | 20.8 | 27 | 28.1 | 28 | 28 | 28.2 | 28.5 | 77.1 | 19 | 3.1 | 2.1 |
| 30 | 61.63 | 26 | 32.8 | 21.5 | 27 | 29 | 28 | 28.4 | 28.2 | 28.5 | 78.1 | 19.3 | 3.4 | 2.7 |
| 31 | 60.82 | 25.9 | 32.6 | 20.7 | 27 | 28.3 | 28 | 28.3 | 28.1 | 28.5 | 80.1 | 19.7 | 4.3 | 2.7 |
| Mean | 760.37 | 26.1 | 32.2 | 22.1 | 27.6 | 29 | 28.4 | 28.6 | 28.3 | 28.5 | 81.4 | 20.3 | 2.9 | 2.2 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  | 89.3 | 68.5 |
| Departure from normal | +1.70 | —0.7 | +1.1 | —1.0 |  |  |  |  |  |  | —2.2 | —1.4 |  |  |

| Date. | Wind. |  |  |  | Clouds. |  |  |  |  | Sunshine. |  | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Upper. |  | Lower. |  |  |  |  |  |
|  |  | Km. | Km. |  | 0-10. |  |  |  |  | h. | m. | mm. |  |
| 1 | SW quad. | 200 | 21 | SW | 7.5 | Ci.-S. | NW | Cu. | SW | 7 | 55 |  |  |
| 2 | Variable | 104.5 | 12 | NW | 6.7 | Ci. | E | Cu. | S | 8 | 05 |  | ⚡ p. |
| 3 | WSW, ESE | 112 | 14 | WSW | 4.5 | Ci. |  | Cu. | E | 8 | 10 |  | Γ⚡ p. |
| 4 | W quad. | 155 | 14 | NW | 3.8 | Ci. |  | Cu. | ESE | 10 | 35 |  |  |
| 5 | NW quad. | 158.5 | 18 | WNW | 7.7 | Ci.-S. |  | Cu. | NNE | 7 | 15 |  |  |
| 6 | Variable | 111 | 15 | WSW | 7.2 | Ci |  | Cu. | SSW, E | 5 | 00 |  |  |
| 7 | NE quad. | 106 | 22 | ENE | 5.7 | Ci.-S. |  | Cu. | E | 7 | 25 |  | Γ⚡ p. |
| 8 | W quad. | 157 | 16 | WNW | 3.5 | Ci. | SSE | Cu. | E | 9 | 25 |  | ⊤° p. |
| 9 | WSW. NE | 135 | 15 | WSW | 5.3 | Ci. |  | Cu. | E | 7 | 30 |  |  |
| 10 | WSW | 116 | 12 | SSW | 6.4 | Ci. |  | Cu. | ENE, ESE | 6 | 00 |  | ⚡ p. |
| 11 | W quad. | 115 | 11.5 | WSW | 7.2 | A.-Cu. |  | Cu. | E | 5 | 35 |  | ⚡ p. |
| 12 | W quad. | 98.5 | 13.5 | WNW | 6.6 | Ci.-S. |  | Cu. | ENE | 4 | 40 | 0.3 | d° a. ⚡ p. |
| 13 | NE | 76.5 | 10 | NNE | 9.5 | Ci.-S. |  | Cu.-N. | E | 0 | 00 | 3.1 | ● a. |
| 14 | NW quad. | 144.5 | 20.5 | NNW | 6.1 | Ci. |  | Cu. | E | 7 | 30 |  | Ω a. ⌒a p. Γ⚡ p. |
| 15 | E quad. | 166.5 | 14.5 | WSW | 6.1 | Ci. |  | Cu.-N. | EbyN | 5 | 40 |  | Ω$^2$ a. Γ⚡ a. p. ⚡p. |
| 16 | SE | 119 | 15 | N | 8.1 | Ci.-S. |  | Cu. | ESE | 2 | 40 |  | Γ⚡ a. |
| 17 | Variable | 98.5 | 10.5 | WNW | 6.4 | Ci. |  | Cu. | E | 5 | 25 | 1.8 | Γ⚡ ● p. |
| 18 | NE quad. | 140.5 | 15 | N | 9.1 | Ci.-S. |  | Cu -N. |  | 0 | 30 | .4 | d° a. p. |
| 19 | NE quad. | 214 | 21 | NE | 8 | A.-Cu. |  | Cu. | E | 2 | 55 | .3 | d a. d° p. |
| 20 | Variable | 108.5 | 17 | NE | 8.2 | A.-Cu. |  | Cu.-N. | E | 3 | 40 |  |  |
| 21 | NE quad. | 83 | 8.5 | W | 7.3 | A.-Cu. | ENE | N.-cf. | ENE | 1 | 30 |  |  |
| 22 | W quad. | 113.5 | 12 | WSW | 2.4 | Ci |  | Cu. | E | 8 | 05 |  |  |
| 23 | W quad. | 84 | 10 | WbyN | 8.9 | Ci.-S. |  | Cu.-N. | E | 1 | 00 | 3.8 | d° a. ● p. |
| 24 | E quad | 149 | 13 | SE | 7.8 | Ci.-S., A.-Cu. |  | Cu.-N. | E | 5 | 40 |  | ⌒$^2$ d° p. |
| 25 | SE quad. | 153.5 | 16 | ESE, NNW | 7.8 | Ci.-S. |  | Cu. | E | 4 | 50 |  | d° a. |
| 26 | W quad. | 100.5 | 13 | W | 2.6 | Ci. |  | Cu. | E | 10 | 15 |  |  |
| 27 | SE quad. | 106.5 | 12.5 | WNW | 2.8 |  |  | Cu. | E | 9 | 35 |  |  |
| 28 | W quad. | 102 | 15 | WNW | 2.6 | A.-Cu. |  | Cu. | E, NE | 9 | 20 |  |  |
| 29 | W quad. | 62 | 14 | W | 5.8 | A.-Cu. |  | S -Cu. | ENE | 4 | 00 |  |  |
| 30 | NE quad. | 112.5 | 14.5 | WNW | 3.3 | A.-Cu. |  | Cu. | E | 8 | 30 |  |  |
| 31 | W quad. | 126.5 | 14 | WSW | 4.6 |  |  | Cu. | E | 8 | 30 |  |  |
| Mean |  | 123.5 | 14.5 |  | 6.1 |  |  |  |  | 6 | 02 |  |  |
| Total |  |  |  |  |  |  |  |  |  | 187 | 10 | 9.7 |  |
| Departure from normal |  | —56.4 |  |  | —0.5 |  |  |  |  | +15 | 05 | —179.3 |  |

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[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### TAGBILARAN.

[$\phi$=9° 38′ N ; $\lambda$ = 123° 51′ E ; barometer above sea, 21.8 meters ; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean.) | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12* | *0-10.* | | | *mm.* | |
| 1 | 758.62 | ------ | ------ | ------ | ------ | W | 0.2 | 2.5 | Ci. SE | Cu. | ------ | ☇° p. |
| 2 | 59.68 | ------ | ------ | ------ | ------ | S, W | .3 | 2.3 | Ci. | Cu. NW, SW | ------ | ☇° p. |
| 3 | 59.26 | ------ | ------ | ------ | ------ | S | .8 | 2.7 | Ci. | Cu. NNE, E | ------ | ⊤° p. |
| 4 | 58.86 | ------ | ------ | ------ | ------ | W, SW | .3 | 6 | Ci., Ci.-S. | Cu. NW | ------ | ψ° p. |
| 5 | 59 | ------ | ------ | ------ | ------ | SSW | .2 | 4 | Ci.-S. | Cu. NW | 4.6 | ● a. |
| 6 | 59.04 | ------ | ------ | ------ | ------ | S, W | .3 | 2.8 | Ci. | Cu. W | ------ | |
| 7 | 59.55 | ------ | ------ | ------ | ------ | SSE, SE | .3 | 4.7 | Ci. | Cu. SE | 5.1 | ● p. |
| 8 | 59.74 | ------ | ------ | ------ | ------ | SW quad. | .7 | 4 | Ci. | Cu. W, SSE | ------ | |
| 9 | 59.59 | ------ | ------ | ------ | ------ | S, W | .3 | 3.8 | Ci. | Cu. SSE, NW | ------ | d° ☇² p. |
| 10 | 59 | ------ | ------ | ------ | ------ | W | .2 | 5 | Ci., Ci.-S. | Cu. | ------ | d° ☇° p. |
| 11 | 58.65 | ------ | ------ | ------ | ------ | Variable | .5 | 7.7 | Ci.-S. | Cu. | 26.9 | ●² ⌈☇° a. ☇° p. |
| 12 | 58.46 | ------ | ------ | ------ | ------ | S | .2 | 7.2 | Variable | Cu. N, W | 32 | ●² a. |
| 13 | 58.49 | ------ | ------ | ------ | ------ | S | .3 | 4.5 | Ci. | N. SW | 24.4 | ●² a. ⌒² d° p. |
| 14 | 58.91 | ------ | ------ | ------ | ------ | SW | .7 | 6.7 | Ci. | Cu. WSW | 75.7 | d° ⊤° a. ●² a. p. |
| 15 | 59.15 | ------ | ------ | ------ | ------ | Variable | .7 | 3.8 | Ci. | Cu. | ------ | |
| 16 | 59.16 | ------ | ------ | ------ | ------ | SSW, NW | .3 | 5.3 | Ci., Ci.-S. | Cu. | ------ | |
| 17 | 59.14 | ------ | ------ | ------ | ------ | SSE | .3 | 4.5 | A.-Cu. SSE | Cu. SE | 4.1 | ●° ⊤° a. |
| 18 | 59.43 | ------ | ------ | ------ | ------ | Variable | .5 | 5.7 | Ci. SE | Fr.-Cu. N | ------ | d° p. |
| 19 | 58.73 | ------ | ------ | ------ | ------ | NNE | .3 | 6 5 | Ci.-S. | Fr.-N. E, SE | 76.7 | ●² a. p. ⌈☇° p. |
| 20 | 58.43 | ------ | ------ | ------ | ------ | E, NNW | .3 | 8.2 | Ci.-S. | Cu. NE | ------ | |
| 21 | 59.45 | ------ | ------ | ------ | ------ | NW, W | .5 | 6.8 | Ci.-S. | Cu. SE | ------ | |
| 22 | 60.76 | ------ | ------ | ------ | ------ | W, SW | .3 | 3 | Ci. | Cu. W | ------ | |
| 23 | 60.77 | ------ | ------ | ------ | ------ | S | .2 | 2.7 | Ci. | Cu. NW | ------ | |
| 24 | 60.57 | ------ | ------ | ------ | ------ | SW, W | .3 | 2 | Ci. | Cu. NW | ------ | |
| 25 | 60.68 | ------ | ------ | ------ | ------ | NW, NNW | .3 | 2.5 | Ci. | Cu. W | ------ | |
| 26 | 60.52 | ------ | ------ | ------ | ------ | W, S | .5 | 1.7 | Ci. | Cu. SSE | ------ | |
| 27 | 60.70 | ------ | ------ | ------ | ------ | Variable | .5 | 3.2 | Ci. | Cu. Variable | ------ | |
| 28 | 61.15 | ------ | ------ | ------ | ------ | S, NW | .3 | 2.8 | Ci. | Cu. SE, NNW | ------ | |
| 29 | 60.67 | ------ | ------ | ------ | ------ | SSE | .2 | 3.5 | Ci. | Cu. SE | ------ | |
| 30 | 60.37 | ------ | ------ | ------ | ------ | Variable | .5 | 2.7 | Ci. | Cu. SE | ------ | |
| 31 | 59.40 | ------ | ------ | ------ | ------ | Variable | .5 | 4.2 | Ci. | N. N | 5.1 | ●° p. |
| Mean | 759.55 | ------ | ------ | ------ | ------ | ------ | .4 | 4.3 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 254.6 | |

### CEBU.

[$\phi$=10° 18′ N ; $\lambda$=123° 54′ E ; barometer above sea, 4.5 meters ; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 758.67 | 27.4 | 33.1 | 23.1 | 79.8 | SSE | 6.1 | 1.3 | Ci. | Cu. WSW | ------ | Ω° ⌈☇° a. |
| 2 | 59.65 | 27.9 | 32.1 | 24.4 | 77.7 | Variable | 7.1 | 1.7 | Ci. | Cu. | ------ | ⌈☇ p. |
| 3 | 59.14 | 27.6 | 31.5 | 23.7 | 75.5 | NE quad. | 10.2 | 3.2 | Ci. | Cu. ENE | ------ | Ω° a. ψ ⌈☇ p. |
| 4 | 58.61 | 27.7 | 32 | 24.5 | 79 | SSE | 5.2 | 5.7 | Ci.-S. | Cu.-N. | ------ | Ω ⌒ d° a. ⌈☇ ☇ p. |
| 5 | 58.79 | 27.3 | 32 | 23.9 | 78.8 | SSE, NNE | 5.4 | 3 | Ci.-S. | Cu. | ------ | ○ d ●° ⊤° a. ⊕ p. |
| 6 | 59.01 | 27.2 | 32.5 | 23.6 | 77 | Variable | 6.4 | 4 | A.-Cu. N | Cu. | ------ | ⌈☇ a. p. ⊕ p. |
| 7 | 59.53 | 27 | 31.6 | 22.3 | 77.5 | Variable | 7.8 | 3.2 | Ci. | Cu. | 55.9 | Ω d a ⌈☇ ●² p. |
| 8 | 59.68 | 27.1 | 31.9 | 22.5 | 79.7 | SE quad. | 6.5 | 3.5 | A.-Cu. | Cu. | 3 | ≡ a ☇ ⌈☇ p. |
| 9 | 59 62 | 26.8 | 32.1 | 23.5 | 83 | Variable | 6.3 | 5.5 | Ci.-S. | Cu. | 2 | ≡° a. ● a. p. ⌈☇ p. |
| 10 | 58.92 | 27.2 | 32 | 23.9 | 79.5 | NNE, NW | 5.3 | 8.5 | Ci.-S. | Cu.-N. | ------ | d a ⌈☇ d² ψ p. |
| 11 | 58.44 | 27.5 | 31.5 | 23.2 | 76.3 | NE quad. | 9.5 | 4 | Ci -S. | Cu. ENE | ------ | d° p. |
| 12 | 58.48 | 26.5 | 31.4 | 23.8 | 83.7 | Variable | 5.3 | 3 | A -Cu. | Cu.-N. NNW | 2 | d ● a. ●° ☇° p. |
| 13 | 58.33 | 26.8 | 31.5 | 22.9 | 78.5 | NW, SSW | 6.5 | 2.7 | Ci. | Cu. | 12.2 | ⌈☇ d ● p. |
| 14 | 58.62 | 26.5 | 32 | 23.5 | 84.2 | ESE | 5 | 5.8 | Ci.-S. | Cu.-N. | 4.5 | ⌈☇° a. d ● ⌈☇ ☇° p. |
| 15 | 58.76 | 26.9 | 30.9 | 23.1 | 80.5 | E | 6.1 | 3.2 | Ci.-S. | Cu. | ------ | Ω p. |
| 16 | 59.02 | 26.3 | 30 | 23.7 | 84 | NNW, S | 5 | 4.5 | Ci.-S. | Cu.-N. EbyN | 6.9 | ● a. Ω a. p. ●° p. |
| 17 | 59.22 | 27.6 | 31.3 | 24.4 | 76.8 | E | ------ | 4.5 | Ci. | Cu.-N. | 12.7 | ⌈☇ ● p |
| 18 | 59 52 | 25.3 | 27.9 | 23.7 | 88.7 | N, NNE | 6.4 | 9.5 | Ci.-S. | N. | .3 | d a. p. ⌈☇ a. |
| 19 | 58.80 | 26 | 30 | 22.7 | 84.2 | NE quad. | 9.8 | 6.8 | Variable | Cu. ENE | 5.6 | d ●° p. |
| 20 | 58.46 | 27.3 | 31.6 | 23.6 | 76 | NE | 8.7 | 6.2 | A.-Cu. | Cu. | ------ | d° a. |
| 21 | 59.60 | 26.9 | 31 | 23.5 | 73.5 | NE quad. | 8.6 | 4.7 | Ci.-S. | Cu. | ------ | ∞ p. |
| 22 | 60.66 | 26.5 | 30.7 | 22.5 | 78.2 | NE quad. | 9 | .7 | Ci. | Cu. NE | ------ | Ω a p. |
| 23 | 60.63 | 26.2 | 30 | 22.1 | 75.2 | NE quad. | 8.2 | 1.5 | Ci. | S.-Cu., Cu. | ------ | Ω d° a. |
| 24 | 60.68 | 25.9 | 30 | 21.4 | 75.7 | ENE | 7.4 | .7 | Ci., Ci.-S. | Cu. | ------ | Ω° a. |
| 25 | 60.80 | 26.7 | 31.4 | 22.9 | 77 | E quad. | 7.8 | .5 | Ci. | Cu. SbyE | .3 | Ω° a. |
| 26 | 60.66 | 26.9 | 30.4 | 23.5 | 75.5 | NE quad. | 10.7 | .8 | Ci. | Cu.-N., Cu. | ------ | d² a. |
| 27 | 60.77 | 27.4 | 30.6 | 23.4 | 72.3 | ENE | 11.4 | 1.2 | Ci.-S. | Cu. | ------ | |
| 28 | 61.22 | 26.4 | 30.6 | 22.2 | 74.3 | NE quad. | 9.6 | .5 | Ci. | Cu. | ------ | Ω° a. |
| 29 | 60.79 | 26.8 | 31 | 22.8 | 75.3 | NE quad. | 9.7 | .3 | Ci. | Cu. | 4.8 | Ω° a. ☇ ⌈☇° p. |
| 30 | 60.50 | 27.4 | 31.1 | 24 | 78.7 | NE quad. | 10.5 | 1.5 | Ci. | Cu. | ------ | ● a. d p. |
| 31 | 59.48 | 27.4 | 3 .6 | 24.9 | 74.7 | NE quad. | 10.8 | 2.3 | Ci. | Cu. N | ------ | ☇° p. |
| Mean | 759.52 | 26.9 | 31.2 | 23.3 | 78.4 | ------ | 7.7 | 3.4 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 110.2 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain. 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | | | mm. | |
| 1 | 758.72 | 26.9 | 30.2 | 24 3 | 83.2 | SW | 6.7 | 7.5 | Ci. | | Cu. | | ------ | Ω a. ○ ⊤ p. |
| 2 | 59.80 | 27.3 | 32.7 | 23 | 80.3 | SW | 3.7 | 4.3 | Ci. | | Cu. | | ------ | Ω ⊤ a. ●° ϟ p. |
| 3 | 59.32 | 27.4 | 32.5 | 23.2 | 77.5 | NE | 6.7 | 4.7 | Ci. | | Cu. | NE | ------ | Ω ≡° a ϟ p. |
| 4 | 58.98 | 26.4 | 32.5 | 23.8 | 81 | Variable | 5.6 | 7.3 | Ci. | | Cu. | NE | 3.9 | ϟ a. p. ⊤ ● ⌈ϟ p. |
| 5 | 59.02 | 26.8 | 30.7 | 23.6 | 83.2 | Variable | 4 | 8.5 | Ci. | | Cu. | | ------ | ϟ a. p. ⊤ p. |
| 6 | 59.26 | 26.6 | 31.4 | 24 | 81.2 | SW | 4.1 | 9.5 | Ci. | | Cu. | | ------ | ϟ a. p. Ω a. ⊤ p. |
| 7 | 59.56 | 27 | 32.5 | 22.9 | 78 | NE | 4.6 | 6 | Ci. | | Cu. | NE | .8 | Ω a. ϟ ● p. |
| 8 | 59.92 | 26.8 | 32.4 | 23.8 | 81.2 | NE | 5.6 | 6.7 | Ci. | | Cu. | | 4.3 | ϟ a. p. ⊤ ● p. |
| 9 | 59.83 | 27.6 | 32.5 | 24.2 | 80.5 | NE | 5.6 | 7.8 | Ci.-S. | | Cu. | NE | 1.8 | ● a. p. ⌒ a. ⊤ ⌈ϟ ⊍ |
| 10 | 59.19 | 26.9 | 32.1 | 24.4 | 82.2 | NE | 5 1 | 7 | Ci. | | Cu. | NE | 1.6 | ● ⌈ϟ ϟ ⊍ p. |
| 11 | 58.67 | 27.5 | 31.7 | 23.8 | 75.3 | NE | 7 | 6.8 | Ci. | | Cu. | NE | ------ | ϟ p. |
| 12 | 58.56 | 26.6 | 31.3 | 23.2 | 80 | NE, N | 5.7 | 6 | Ci. | | Cu. | NE | .8 | ϟ ● p. |
| 13 | 58.50 | 26.2 | 31.4 | 23.2 | 83.8 | SW | 4.7 | 6 | Ci. | | Cu. | | 26.4 | ●° a ⊤ ⌈ϟ ● ϟ p. |
| 14 | 58.99 | 26.1 | 29.6 | 24.2 | 86.3 | NE | 4.2 | 6.8 | Ci.-S. | | Cu. | N | ------ | ϟ a. ⌈ϟ a. p. |
| 15 | 58.96 | 27.4 | 32.5 | 23.2 | 79.2 | NE, N | 4.6 | 5.5 | Ci. | | Cu. | NNE | ------ | Ω² a. ϟ ⌈ϟ p. |
| 16 | 59.04 | 27.1 | 32.7 | 23.5 | 78.3 | NE | 5.7 | 3.8 | Ci. | | Cu. | NE | ------ | Ω² a ⊤ ϟ p. |
| 17 | 59.33 | 27 | 32.1 | 23.8 | 78.3 | NE | 6.7 | 4.3 | Ci. | | Cu. | NE | .3 | Ω° a. ϟ Ω p. |
| 18 | 59.91 | 25.4 | 29.8 | 23.8 | 88.2 | NE | 10 | 7.5 | Ci.-S., Ci. | | S.-Cu. | NE | 8.1 | ⌈ϟ ● a. ϟ p. |
| 19 | 58.94 | 25.7 | 30.3 | 22.8 | 87.7 | NE | 12.5 | 7.2 | Ci.-S., Ci. | | Cu. | NE | 39.9 | ● a. p. ⊤ a. ●² p. |
| 20 | 58.69 | 26.5 | 30.5 | 23.1 | 79.2 | NE | 10.9 | 6.7 | A.-Cu. | | Cu. | NE | 3.3 | d ● p. |
| 21 | 59.82 | 26.2 | 30.3 | 23.2 | 77.3 | NE | 13.8 | 6.2 | Ci. | | Cu. | NE | ------ | |
| 22 | 60.84 | 26.2 | 30.8 | 22.9 | 80.7 | NE | 10 | 3.7 | Ci. | | Cu. | NE | ------ | Ω a. |
| 23 | 60.88 | 26.2 | 30.8 | 22.6 | 76.2 | NE | 8.2 | 4 | Ci. | | Cu. | ENE | ------ | Ω a. |
| 24 | 60.89 | 25.9 | 30.7 | 21.9 | 75.8 | NE | 9.7 | 2.8 | Ci. | | Cu. | | ------ | Ω a. |
| 25 | 60.91 | 26.3 | 30.9 | 22.6 | 76.3 | NE | 10.3 | 3.3 | Ci. | | Cu. | NE | ------ | Ω a. |
| 26 | 60.90 | 26.3 | 31.5 | 22.5 | 75.8 | NE | 9.8 | 2.8 | Ci. | | Cu. | NE | ------ | Ω a. |
| 27 | 61.10 | 26.5 | 30 8 | 22.6 | 76.2 | NE | 12.2 | 2.7 | Ci. | | Cu. | NE | ------ | Ω a. |
| 28 | 61.46 | 26.2 | 31.9 | 22.2 | 75 | NE | 9.5 | 2.3 | Ci. | | Cu. | NE | ------ | Ω a. |
| 29 | 61.05 | 27 | 31.8 | 22.9 | 75.2 | NE | 9.9 | 3.7 | Ci. | | Cu. | NE | 1.3 | Ω a. ϟ p. |
| 30 | 60.62 | 27.4 | 32.6 | 24.1 | 78.5 | NE | 9.5 | 6.3 | Ci. | | Cu. | | ------ | ϟ a. p. ● d ⌒ a. |
| 31 | 59.86 | 27.2 | 32 | 23.9 | 77.7 | NE | 9.4 | 6 | Ci. | | Cu. | NE | ------ | Ω d a. ϟ p. |
| Mean | 759.73 | 26.7 | 31.5 | 23.3 | 79.7 | ------------ | 7.6 | 5.6 | ------------ | | ------------ | | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | | ------------ | | 92.5 | |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Clouds. Amount (mean). | Upper. | | Lower. | | Rain. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | | | mm. | |
| 1 | 758.95 | 26 | 31.6 | 22.2 | 84.8 | S | 5.7 | 5.3 | Ci., Ci.-S. | | Cu., Cu.-N. | E | ------ | ≡° a. ⊤ p. |
| 2 | 59.89 | 25.3 | 31.8 | 21.1 | 85.5 | Variable | 6 | 3.3 | Ci. | | Cu.-N. | NE | 19.3 | ≡° a. ⌈ϟ ● p. |
| 3 | 59.37 | 26.3 | 31.8 | 21.5 | 83.8 | Variable | 5.5 | 7 | Ci.-S. | E | Cu. | ENE | 5.4 | ≡° a. p ⊤ d ⊕° p. |
| 4 | 58.98 | 25.8 | 31.8 | 21.6 | 86.7 | N | 5.4 | 6.2 | Ci.-S. | | Cu.-N. | E | 1.8 | ≡° p a. ⌈ϟ ϟ p. |
| 5 | 59.20 | 25.9 | 29.7 | 21.8 | 82.7 | NW | 4.9 | 7 | Ci.-S. | NE, wbys | Cu. | W | ------ | ≡° a ⊤ ϟ ⊕° ⊍ p. |
| 6 | 59.36 | 26.2 | 32.1 | 22 | 85.8 | NW, SW | 5 | 6.2 | A.-Cu. | E | Cu. | NE | 5.1 | ≡° a. ⊤ p ϟ p. |
| 7 | 59.76 | 26.1 | 32.1 | 21.2 | 83.5 | N | 6 | 3.5 | Ci. | | Cu. | ENE, NE | 1.1 | ≡° a. p ϟ p |
| 8 | 59.89 | 25.5 | 29 | 22.5 | 89.8 | N | 4.1 | 5.3 | A.-Cu. | E | Cu -N. | E | 10.4 | p d a p ⌒² ϟ p. |
| 9 | 59.68 | 26.2 | 30.8 | 22 | 85.2 | N quad. | 5.4 | 5.7 | Ci., Ci.-S. | | Cu. | NEbyN | 10.8 | ≡° ● a. p ⊤ ϟ p. |
| 10 | 59.28 | 25.7 | 30.1 | 22.3 | 85.7 | NE quad. | 4.4 | 8.8 | Ci.-S. | E | Cu.-N. | | 8.9 | ⊤ ϟ ● ⊍ ⊕ p. |
| 11 | 58.74 | 25.8 | 30 | 22 | 86 | Variable | 4.7 | 8.3 | Ci.-S. | | Cu.-N. | NE, NEbyN | 2.8 | ≡° a. d ⊕ p. |
| 12 | 58.46 | 25.6 | 31.2 | 21.4 | 86.3 | NW quad. | 5.8 | 6 | Ci. | EbyN | Cu.-N. | ENE | 2 | ≡° p ⌒° d ⊤ ϟ |
| 13 | 58.60 | 25.3 | 30 | 22.3 | 90 | N, NE | 4.8 | 6.7 | Ci.-S. | E | Cu.-N. | W | 8.4 | ≡° a. ⊤ ● ϟ p. |
| 14 | 58.94 | 25 6 | 29 | 22.5 | 89.3 | Variable | 5.1 | 7.3 | Ci.-S. | EbyN | Cu.-N. | NW | 2.5 | ≡ ⌒ d a. ϟ p. |
| 15 | 58.97 | 26.3 | 31.9 | 22 | 85.5 | NW quad. | 4.7 | 6.5 | Ci. | NW | Cu.-N. | | .5 | ⊕ ≡ a. p p. |
| 16 | 59.24 | 25.2 | 31.6 | 21.7 | 88.3 | N | 5 2 | 5.5 | Variable | | Cu.-N. | ENE | 13.7 | ● ⌈ϟ p. |
| 17 | 59.69 | 25.1 | 30.4 | 21.2 | 88.8 | N, NE | 4.8 | 6.2 | A.-Cu. | E | Cu.-N. | E | 10.9 | ≡ a. ● ⊤ ⌒ ϟ p. |
| 18 | 59.90 | 24 | 24.9 | 22.6 | 94.7 | N, NE | 4.1 | 9.5 | Ci.-S. | | Cu.-N. | ENE | 30.8 | d ≡ a ● a. p. |
| 19 | 58.95 | 25.2 | 27.6 | 22.5 | 89.3 | NW quad. | --------- | 8.8 | Ci.-S. | | Cu.-N. | NE | 3.1 | d a. p. |
| 20 | 58.64 | 26.8 | 30.3 | 23.2 | 82 8 | N | 5.1 | 8 | Ci.-S. | | Cu.-N. | NE | 1 | p a. d ⊤ p. |
| 21 | 59.82 | 25.8 | 31.3 | 20.8 | 79.3 | N | 5.2 | 6 | Ci.-S. | | Cu. | NE | ------ | |
| 22 | 60.85 | 25.1 | 29.8 | 20.5 | 83 | Variable | 5 | 5.8 | Ci.-S. | E | Cu., Cu.-N. | NW | ------ | |
| 23 | 60.90 | 24.8 | 31.9 | 20.6 | 81.7 | N | 6 | 3.8 | Ci. | NE | Cu. | | ------ | |
| 24 | 61.03 | 24.9 | 31.9 | 19.4 | 81.3 | N | 5.1 | 4.8 | Ci. | | Cu.-N. | ENE | ------ | ≡° a. |
| 25 | 61.10 | 25.7 | 31.9 | 21.2 | 80.3 | N | 5.7 | 3.5 | Ci.-S., Ci. | | Cu.-N. | E | ------ | ≡° a. |
| 26 | 61 | 25.3 | 32.1 | 19.4 | 79.8 | Variable | 5.6 | 4 | Ci. | | Cu.-N. | NEbyN | ------ | ≡° a ⊤ p. |
| 27 | 61.20 | 26.1 | 31.7 | 20.9 | 79 | Variable | 6.1 | 4.5 | Ci.-S. | E | Cu. | | ------ | ≡ a. |
| 28 | 61.60 | 25.7 | 32 1 | 19.8 | 80 | N quad. | 5.3 | 3.3 | Ci.-S. | | Cu.-N. | E | ------ | ≡° a ϟ p. |
| 29 | 61.29 | 24.8 | 30 6 | 20.9 | 87.8 | N | 5.4 | 4.3 | Ci.-S. | | Cu. | NE | 1.3 | ≡° a ⌈ϟ ●° ⊤ ϟ p. |
| 30 | 60.86 | 25.7 | 31 | 21.7 | 86.8 | N | 5.3 | 5 | Ci.-S. | NE | Cu.-N. | NE | .3 | ⌒ a. p. ⊤ p p. |
| 31 | 59 86 | 26 | 29.5 | 22.8 | 84.7 | W quad. | 4.6 | 6.8 | Ci.-S. | E | Cu -N. | NE | 2.5 | p ⊤ a. p. |
| Mean | 759.81 | 25.6 | 30.7 | 21.5 | 85.1 | ------------ | 5.2 | 5.9 | ------------ | | ------------ | | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | -------- | -------- | ------------ | | ------------ | | 142.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 758.95 | 27.2 | 33.4 | 23.5 | 87.2 | SE | 0.3 | 5 | Ci.-S. NE | Cu., Cu.-N. S | ------ | Ω$^2$ a. p. T p. |
| 2 | 59.96 | 27.1 | 34.2 | 23.8 | 84.5 | NW quad. | .7 | 3.7 | Ci. | Fr -Cu., N. NE | 1.5 | Ω$^2$ a. p. ● T p. |
| 3 | 59.81 | 27.3 | 33.4 | 24.6 | 85 | N, W | 1 | 7.2 | Ci.-S., Ci. | Cu.-N. NE | ------ | ⌒$^2$ a. d ⊍ p. |
| 4 | 59.06 | 27.7 | 33.7 | 24.3 | 84.3 | SE quad. | .7 | 4.8 | Ci.-S. | Cu. ENE | ------ | Ω$^2$ a. T < p. |
| 5 | 59.12 | 26.8 | 32.6 | 23.8 | 86.8 | WNW | .8 | 6.5 | Ci.-S. W | Cu. ENE | 11.4 | Ω ◌$^2$ a. < ● Φ$^2$ p. |
| 6 | 59.17 | 27.3 | 33.4 | 22.6 | 83.5 | NW | 1.2 | 5.8 | Ci | Cu. ENE | 2.3 | ● ⊏$^2$ < p. |
| 7 | 59.74 | 27.6 | 33.2 | 23.5 | 82.7 | SE quad. | .8 | 4 | Ci -S. SW | Fr.-Cu. ENE | ------ | Ω$^2$ a. p. |
| 8 | 59.98 | 27.6 | 32.4 | 24.6 | 84 | NW quad. | .7 | 6 | Ci.-S. NW | Cu.-N., Cu. ENE | .8 | d a. ●° ⊍$^2$ p. |
| 9 | 59.87 | 27.7 | 31.8 | 24.5 | 83.2 | N | 1 | 6.2 | Variable | Cu. ENE | ------ | Φ$^2$ Ω a. |
| 10 | 59.31 | 26.2 | 30.4 | 24.6 | 91.8 | N quad. | .7 | 9 | Ci. | Cu.-N. NNE | 12.5 | Ω$^2$ a. ● a. p. |
| 11 | 58.76 | 26.1 | 31.5 | 24.2 | 89 | WNW, SE | 1.2 | 8.7 | Ci. SW | Cu. NE | 15.7 | ⊍$^2$ a. ● a. p. |
| 12 | 58.28 | 27.4 | 33 | 24 | 85.7 | NW quad. | .7 | 7.5 | Ci. SW | Cu. NNE | ------ | ⊍° Φ° a. |
| 13 | 58.44 | 26.8 | 33 | 24.2 | 87.8 | W quad. | .7 | 6 | Ci. SW | Cu., Cu.-N. N, NE | ------ | Ω a. |
| 14 | 58.93 | 27.2 | 32.4 | 24 | 83.5 | NW, NNW | .8 | 5.7 | Ci.-Cu. SW | Cu.-N. NE | 2 | Ω$^2$ ● a. < p. |
| 15 | 59.03 | 27.8 | 33.3 | 23.8 | 79 | NW quad. | .3 | 5.5 | Ci. SW, S | Cu. NE | ------ | Ω$^2$ ◌$^2$ a. |
| 16 | 59.24 | 26.7 | 34.3 | 24.4 | 85.5 | WNW | .3 | 4.8 | Ci. SSW | Cu.-N. NE | 2.5 | Ω$^2$ a. ● p. |
| 17 | 59.57 | 27.2 | 33.1 | 24.3 | 85.3 | NW quad. | .5 | 4.5 | Ci. | Cu. NE | 27.9 | Ω$^2$ a. ●- p. |
| 18 | 60.26 | 24.4 | 25.7 | 23.4 | 94.7 | N | 1 | 9.2 | ------ | N. NE | 47.3 | ●- a. p. T p. |
| 19 | 59.34 | 25.4 | 27 | 23.2 | 91.2 | N quad. | 1.2 | 8 | ------ | Cu.-N., N. NEbyE | 10.9 | ● a. p. < p. |
| 20 | 58.86 | 26.6 | 29.6 | 24.7 | 83.8 | N | 2 | 7 | Ci. SSW | Cu.-N. NE | 10.7 | ● a. p. |
| 21 | 59.95 | 27 | 31.6 | 24 | 80.7 | N | .7 | 6.8 | Ci. SSW | Cu. NE | ------ | ○- a. p. |
| 22 | 60.97 | 26.4 | 30.5 | 24.4 | 84.5 | N quad. | .5 | 7 | Ci.-S. SSW | Cu.-N. NE | ------ | |
| 23 | 61.03 | 27.4 | 32.3 | 24 | 78.2 | NW quad. | .8 | 6.2 | Ci.-S. SSW | Cu., Cu.-N. NE | 8.1 | ● p. |
| 24 | 61 18 | 26.8 | 32.8 | 23.2 | 82.2 | N quad. | .5 | 4.5 | Ci. SSW | Cu. NE | ------ | Ω$^2$ p. |
| 25 | 61.22 | 27.1 | 32.9 | 23.4 | 79.2 | NW quad. | .5 | 3.7 | Ci. | Fr.-Cu. NNE | 1.3 | Ω$^2$ a. p. ● p. |
| 26 | 61.24 | 25.8 | 32.6 | 22.6 | 85 | N | .8 | 5.2 | Ci. SSW | Cu. NE | 3.1 | Ω$^2$ a. p. ● ⊏ p. |
| 27 | 61.35 | 26.6 | 31.3 | 23.9 | 80.8 | N quad. | 1 | 4.2 | Ci.-S. SSW | Cu. NNE | 1 | Ω$^2$ a. p. ●° p. |
| 28 | 61.76 | 27 | 33.4 | 22.5 | 78.2 | NE | .5 | 3.5 | Ci.-S. | Fr.-cu., cu.-N. NE | ------ | Ω$^2$ a. |
| 29 | 61.46 | 26 | 32 | 23.5 | 87.2 | NNW | .8 | 6.7 | Ci.-S. | Cu. ENE | 6.9 | Ω a. T ● ⌒ p. |
| 30 | 60.89 | 26.7 | 32 | 24.2 | 88.8 | NW quad. | 1 | 6 | Ci.-S. W | Cu. ENE | 5.3 | ● a. p. ⌒ a. |
| 31 | 59.95 | 26.6 | 30.5 | 24.4 | 86.7 | N quad. | 1.2 | 7.5 | Ci.-S. W | Cu. ENE | 13.2 | ● a. p. |
| Mean | 759.89 | 26.8 | 32 | 23.9 | 84.8 | ------------ | .8 | 6 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 184.4 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km.p.h. | 0-10. | | | mm. | |
| 1 | 758 57 | 26.6 | 34.4 | 23.1 | 87.2 | Variable | 4.4 | 5.7 | Ci.-S. | Cu., N. SE | ------ | Ω ○° ⊕° T < ⊏ Φ |
| 2 | 59.92 | 26.7 | 33.3 | 21.7 | 85.8 | S | 3.2 | 6 | Ci. NE, N | Cu. NE, N | ------ | Φ ∞ p. |
| 3 | 59.73 | 27.4 | 33.5 | 23.1 | 84.5 | NE | 3.9 | 5.7 | Ci. | Cu. NE | ------ | ∞ ⊏° d° p. |
| 4 | 58 90 | 27.2 | 33.4 | 24.2 | 84.8 | NE | 3.8 | 4.2 | Ci. | N.-cf. NE | ------ | < Φ° ⊍° T° p. |
| 5 | 59 | 26.8 | 33.5 | 22.9 | 85.8 | S quad. | 3.5 | 6.8 | Ci. | Cu. | ------ | T° ⊕° ◌° a. p. < p. |
| 6 | 59.30 | 26.8 | 33 | 23.5 | 83.8 | NE | 3.3 | 8.2 | Ci.-S. | N. NW | ------ | T° < ⊍ ∞ p. |
| 7 | 59.69 | 26.6 | 33.5 | 22.5 | 87 | NE | 3.6 | 7 | Ci. | Cu. NE | ------ | Φ ∞ p. |
| 8 | 60.31 | 26.2 | 31.8 | 23.7 | 88.3 | Variable | 4 | 7.8 | Ci. | N. NE, N | 3.5 | ⌒° a. ●° a. p. < p. |
| 9 | 60.04 | 27.5 | 33.2 | 24.2 | 84.2 | NE | 6 | 8 | Ci. | Cu. NE, NW | 3.6 | ●° a. T° < Φ p. |
| 10 | 59.54 | 26.6 | 31.6 | 24.7 | 89.7 | N quad. | 3.8 | 8.5 | Ci.-S. | N. N, NE | ------ | p d° T° a. <° p. |
| 11 | 59.03 | 27.4 | 33 | 24.5 | 84.3 | NE | 4.6 | 7.8 | Ci., Ci.-S. | Cu., N. NE | 14.8 | <° p p. |
| 12 | 58.69 | 27 | 33 | 23.4 | 85.3 | Variable | 3 4 | 7 | Ci. | Cu. N, NW | 3.8 | ●° a. < p. |
| 13 | 58.48 | 27.4 | 32.2 | 24.5 | 89.7 | N, W | 5.9 | 9 | Ci -S. | N. N | 19.7 | ● < T° a. p. |
| 14 | 59.04 | 26.4 | 32.5 | 24.4 | 89.7 | SW | 3.6 | 6.8 | Ci.-S. | N. NW | 42.7 | ●$^2$ a. < p. |
| 15 | 59.20 | 25.9 | 31.8 | 23 | 88.2 | NE | 3 | 5.8 | Ci.-S. NE | Cu. NE | .5 | ⊍° ●° a. ⊕° ○° p. |
| 16 | 59.14 | 27 | 33.2 | 23 | 85.7 | Variable | 3.7 | 6.2 | Ci. | Cu., Cu.-N. NE | 6.4 | Ω d° a. < p |
| 17 | 59.56 | 26.7 | 32.5 | 23.4 | 86.3 | NE | 4.5 | 7.3 | Ci.-S. | N., Cu. S, NE | 17.3 | ● a. p. < ⊏ p. |
| 18 | 60.30 | 26 | 30.2 | 24.4 | 90.8 | NE | 8 | 8.3 | Ci -S. | N. NE | 3.1 | p a. d < p |
| 19 | 59.37 | 27 2 | 31.4 | 24.4 | 80.5 | NE | 12.3 | 7.2 | Ci.-S. NE | N. NE | 2.3 | ●° a. p. <° p. |
| 20 | 59.25 | 27.3 | 32 6 | 25 | 77.5 | NE | 9.4 | 4.3 | Ci. NE | Cu., Fr.-N. NE | ------ | < p. |
| 21 | 60 32 | 26.9 | 32.3 | 24.2 | 78.2 | NE | 6 1 | 5.8 | Ci. | Cu., Fr.-N. NE | 3.6 | ● p. |
| 22 | 61.37 | 26.8 | 31.9 | 24.1 | 81.3 | N, NE | 6.6 | 5.3 | Ci. | Cu. N | ------ | |
| 23 | 61.23 | 26.1 | 31.9 | 22.3 | 82.2 | Variable | 3.3 | 4.3 | Ci. | Cu. N | .3 | ●° p. |
| 24 | 61.36 | 26.4 | 31.8 | 22.5 | 81.7 | NE | 5 | 6.2 | Ci. | Fr.-Cu. NE | ------ | Ω$^2$ a. |
| 25 | 61.24 | 26.6 | 32.6 | 23.2 | 82.2 | NE | 4.2 | 4.3 | Ci. | Cu. NE | ------ | |
| 26 | 61.32 | 26.1 | 32.3 | 22.8 | 83.7 | N quad. | 4.2 | 5.8 | Ci. | Cu. NE | ------ | |
| 27 | 61.60 | 26.6 | 32.2 | 23.5 | 81.2 | NE | 4.2 | 4.5 | Ci. | Cu. NE | ------ | |
| 28 | 61.9 | 26.6 | 32.4 | 22.3 | 81.5 | N | 5 | 2 | Ci. | Cu. N | .5 | Ω a. ●° p. |
| 29 | 61.38 | 26.8 | 32.7 | 23.7 | 85 5 | SW | 4.3 | 5.7 | Ci. | Cu.-N., N.-cf. NE | 19.9 | Ω a. ⊏ ● p. |
| 30 | 61.02 | 27.3 | 32.4 | 24.8 | 87.5 | NE | 7.4 | 8.5 | Ci. | N. NE | 6.1 | ●° ⌒ a. ● ⊏ p. |
| 31 | 60.28 | 27.1 | 32.6 | 23.8 | 84.5 | NE | 5.7 | 6.8 | Ci.-S. | N. NE | 6.1 | < Φ° ● ⊏ p. |
| Mean | 760 | 26.8 | 32.5 | 23.6 | 84.8 | ------------ | 5 | 6.3 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 154.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.86 | 27.3 | 31.7 | 23.5 | 83.5 | S quad. | --------- | 4.5 | Ci. N | Cu. | ------ | ⊕ ϟ ⊤ p. |
| 2 | 59.93 | 26.2 | 31.9 | 23.1 | 87.3 | Variable | --------- | 3.2 | Ci., Ci.-S. | Cu. NE | 1 | d° ⊤ ⌈ʒ ⊕ p. |
| 3 | 59.72 | 26.5 | 33 | 23 | 87.2 | N quad. | --------- | 6 | Ci.-S. | Cu. NE | 5.1 | Ω a. ●° ⊤ ⊎ p. |
| 4 | 58.92 | 26.2 | 32.4 | 23.5 | 85.7 | Variable | 6.3 | 4.8 | Ci.-S. | Cu. NE | .8 | ⌈ʒ ⊤ d° ϟ ⊕ p. |
| 5 | 59.04 | 26.3 | 33.2 | 22.9 | 85.2 | N quad. | 6.1 | 4.2 | Ci.-S. SE | Cu. | ------ | Ω ⌈ʒ ϟ ⊎ p. |
| 6 | 59.23 | 26.5 | 32.2 | 22.2 | 81.8 | N | 6 | 6.5 | Ci.-S. S | Cu. | ------ | ⌈ʒ ϟ ⊕ p. |
| 7 | 59.84 | 26.6 | 32.7 | 22.3 | 84 | Variable | --------- | 3.5 | Ci., Ci.-S. | Cu. NE | 10.7 | ●° ⊕ ϟ p. |
| 8 | 60.01 | 26 | 31.4 | 23.3 | 88.3 | N quad. | --------- | 8.5 | A.-Cu. | S.-cu., N. NE, ENE | 37.3 | ● d° p. |
| 9 | 60.12 | 25.6 | 28.6 | 23.7 | 90.7 | N quad. | 3.9 | 9.5 | A.-Cu., Ci.-S. | S.-Cu. ENE | 3.3 | d a. ⊕ ϟ p. |
| 10 | 59.38 | 25.9 | 30.1 | 23 | 90.2 | NE | 4 | 8.8 | Ci.-S. | S.-Cu. ENE, NE | 4.8 | d a ●° ϟ p. |
| 11 | 58.68 | 25.8 | 31.7 | 22.5 | 88.2 | NNE | 4.6 | 6.3 | Ci.-S. | S.-Cu. NE | 1.8 | Ω d a. d° p. |
| 12 | 58.25 | 26.8 | 32.2 | 22.6 | 83 | N, NNW | 4.8 | 4.8 | Ci.-S. | Cu. N | ------ | ⊕ a. ϟ p. |
| 13 | 58.34 | 26.3 | 30.9 | 23.4 | 89.2 | Variable | 4.4 | 5.2 | Ci.-S. | Cu. NE | 9.6 | d° ⊤ ⌒° ϟ p. |
| 14 | 58.80 | 27.1 | 32.3 | 23.2 | 84 | Variable | 5.6 | 6.3 | Ci.-S. | Cu. NNE, NNW | ------ | ⌈ʒ ●° a. ϟ p. |
| 15 | 59.06 | 26.1 | 31.7 | 22.4 | 86.5 | Variable | 5.3 | 6.2 | Ci.-S. | Cu. NE | .5 | ⊎ a. d° ϟ p. |
| 16 | 59.32 | 26 | 32.5 | 23.4 | 87.3 | NNE, WNW | 5.4 | 6.7 | Ci.-S. | Cu. NE | 11.9 | ● ϟ p. |
| 17 | 59.50 | 26.2 | 33.2 | 21.8 | 86.3 | Variable | 5.5 | 5 | Ci.-S. | Cu. NE | 1.8 | Ω a. ⌈ʒ d° ϟ p. |
| 18 | 60.36 | 24.4 | 27.4 | 22.7 | 92.5 | N quad. | 6 | 9 | A.-Cu. | N. NE | 13.9 | d° a. ● p. |
| 19 | 59.33 | 25.3 | 29.9 | 22.5 | 90.5 | N | 5.6 | 7.8 | Ci.-S. | S.-Cu. NE | 7.6 | d° a. p. p° p. |
| 20 | 59.05 | 25.9 | 31.1 | 22.3 | 85 | NE | 8.2 | 4.7 | Ci. | S.-Cu. NNE | ------ | d° a. |
| 21 | 60.12 | 25.7 | 32.4 | 21 | 82.7 | NE quad. | 5.8 | 4.7 | Ci.-S. | S.-Cu. NbyE | ------ | ≡° a. |
| 22 | 60.99 | 25.6 | 31.5 | 21.5 | 84.5 | E, NW | 3.6 | 7.3 | Ci.-S. | S.-Cu. N | 1.5 | ≡° d° a. |
| 23 | 61.15 | 25.5 | 31.3 | 21.3 | 84.7 | Variable | 5.6 | 3.7 | Ci. | S.-Cu. NE | ------ | ≡° a. d p. |
| 24 | 61.15 | 25.3 | 32 | 20 | 83.3 | Variable | 6.1 | 2.3 | Ci. | Cu. NE | ------ | Ω a. |
| 25 | 61.33 | 25.4 | 32.5 | 21.1 | 81.7 | Variable | 5.6 | 1.2 | Ci. | Cu. NNE | ------ | ≡° a. |
| 26 | 61.18 | 24.7 | 31.6 | 20.3 | 87.8 | N quad. | 5.3 | 5.8 | Ci.-S. | S.-Cu. NE | 17.5 | Ω a. ● ⊤ p. |
| 27 | 61.32 | 25.8 | 32.4 | 21.6 | 80.7 | N | 6.6 | 1.2 | ------------------ | Cu. NNE | ------ | Ω a. |
| 28 | 61.69 | 25.6 | 31.5 | 21.3 | 83.8 | Variable | 6.4 | 1.8 | Ci. | Cu. NE | ------ | Ω a. ϟ p. |
| 29 | 61.54 | 24.9 | 31.9 | 21.8 | 90 | S | 4.3 | 4.7 | Ci.-S. | S.-Cu. NE | 22.2 | Ω a ● ⊤ ϟ p. |
| 30 | 60.95 | 26.9 | 32.7 | 23.4 | 84.2 | NE, N | 6.3 | 3.3 | Ci.-S., Ci. | s.-cu.,cu.NEquad. | ------ | d ⌒° a. ⊕ ϟ p. |
| 31 | 59.87 | 26.4 | 32 | 23.8 | 87 | NE, N | 5.7 | 5.8 | Ci.-S. | S.-Cu. NNE, NE | 1.5 | ⊤ d ⌒° ⊕ ϟ p. |
| Mean | 759.90 | 26 | 31.7 | 22.4 | 86 | ------------ | 5.5 | 5.3 | ------------------ | ------------------ | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 152.8 | |

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 758.49 | 27 | 32.5 | 22.5 | 83.5 | SW | 6.4 | 4.7 | Ci. NE | Cu. SW | ------ | ≡° a. ϟ° p. |
| 2 | 60.04 | 27.6 | 34.8 | 20.9 | 82.5 | E quad. | 5.6 | 1.7 | Ci. NE | Cu. | ------ | ≡° a. |
| 3 | 59.92 | 28.4 | 34.7 | 22.2 | 80 | NE quad. | 6.3 | 1.7 | A.-Cu. NE | Cu. ENE | ------ | ≡° a. |
| 4 | 59 | 28 | 34.9 | 23.1 | 82 | E | 4.8 | 1.5 | Variable | Cu. | ------ | ≡° a. |
| 5 | 58.90 | 27.3 | 35 | 21.9 | 83.3 | ENE, E | 3.9 | 3.7 | Ci.-S. | Cu. E | ------ | ≡° a d p. |
| 6 | 59.21 | 27 | 34.3 | 21.6 | 83.3 | E | 3.8 | 3.7 | Ci. E, ESE | Cu. | ------ | ≡° ◯° a. ϟ p. |
| 7 | 59.98 | 27.9 | 34.5 | 21.4 | 78.5 | NE quad. | 7.3 | 2 | Ci. | Cu. ENE | ------ | ≡° a. |
| 8 | 60.27 | 27.8 | 34.1 | 22.4 | 75.7 | NNE, NE | 10.9 | 1.5 | Ci. | Cu. | ------ | ≡° a. |
| 9 | 60.13 | 27.4 | 28.6 | 25.4 | 79.7 | NNE | 11.4 | 8.3 | Ci.-S. | Cu. ENE, E | 0.5 | d° a. p. ⊎ p. |
| 10 | 59.50 | 28.2 | 33 | 24.5 | 79.3 | NNE | 10.5 | 6.8 | Ci.-S. | Cu. N, NE | ------ | ●° a. ϟ° p. |
| 11 | 58.98 | 28.8 | 35.2 | 23.1 | 76.8 | NE | 8.1 | 3.2 | Ci. | Cu. NE | 15 | ● p. |
| 12 | 58.46 | 27.2 | 34.9 | 21.2 | 81.5 | NNE | --------- | 5.3 | Ci. | Cu. | 14.7 | ϟ ● p. |
| 13 | 58.48 | 27.4 | 31.9 | 24.4 | 87.7 | NNE | 9.2 | 7.8 | Ci.-S. | Cu.-N. NE | 23.6 | ● a. p. |
| 14 | 58.80 | 27.5 | 33 | 22.5 | 79.2 | NE quad. | 7.6 | 2.7 | Ci., Ci.-S. | Cu. NE | ------ | ϟ° p. |
| 15 | 59.15 | 27 | 34.3 | 20.1 | 79 | NE quad. | 6 | 1.8 | Ci. NNE | Cu. | ------ | ϟ° p. |
| 16 | 59.42 | 28.5 | 33.5 | 24.7 | 78 | NE | 8.6 | 2.8 | Ci. | Cu. ENE | ------ | ϟ° p. |
| 17 | 59.81 | 28 | 34.5 | 23.9 | 79.7 | ENE | 8.8 | 4.2 | Ci. | Cu. NE, ENE | ------ | p p. |
| 18 | 60.65 | 27.4 | 30.6 | 22.9 | 80.3 | NE | 16 | 8.2 | Ci.-S. | Cu. ENE | 36.3 | ● a. p. |
| 19 | 60.03 | 27.7 | 31.5 | 23.3 | 75.8 | NE | 19 | 5 | Ci.-S. | Cu., Cu.-N. NE | ------ | ●$^{2}$ a. ϟ° p. |
| 20 | 59.71 | 27.9 | 32 | 24 | 74.7 | NE, NNE | 19.3 | 2 | Ci. | Cu. NE | ------ | ϟ° p. |
| 21 | 60.25 | 27.5 | 32 | 23.2 | 72.3 | NNE | 16.6 | 2 | Ci. | Cu. NE | ------ | d a. |
| 22 | 61.28 | 27.4 | 32 | 23.1 | 77 | NE, NNE | 13.2 | 2.3 | Ci. | Cu. NE | ------ | ------------------ |
| 23 | 61.26 | 27.4 | 34.2 | 19.4 | 75 | NE | 8.9 | 1.8 | A.-Cu. E | Cu. NE | ------ | ------------------ |
| 24 | 61.34 | 26.2 | 31.9 | 20.8 | 79.2 | NE, NNE | 9 | 3.8 | Ci.-S. | Cu. E | ------ | d a. |
| 25 | 61.41 | 27.7 | 33.7 | 23.5 | 74.5 | NE | 8.5 | 1.2 | Ci. | Cu. E | ------ | ϟ° p. |
| 26 | 61.37 | 27.8 | 34.2 | 21.4 | 74 | NE | 9.8 | .8 | Ci. | Cu. | ------ | ------------------ |
| 27 | 61.64 | 27.5 | 33.6 | 20.8 | 72.7 | NE | 9.1 | 1.2 | Ci. | Cu. NE | ------ | ------------------ |
| 28 | 61.99 | 26.7 | 34 | 20 | 76.7 | NE, NNE | 8.8 | 1.3 | Ci. | Cu. NE | ------ | ------------------ |
| 29 | 61.56 | 28.5 | 34.3 | 24.5 | 77.2 | NE | 10.2 | 1.8 | ------------------ | Cu. NE, E | ------ | ϟ° p. |
| 30 | 61.29 | 28.6 | 34.5 | 25 | 74.7 | NNE | 12.5 | 1.5 | Ci. | Fr.-Cu. NE | ------ | ϟ° p. |
| 31 | 60.37 | 28.2 | 34.5 | 24.7 | 75.7 | NNE | 13.9 | 3 | Ci. | Cu. NE | 4.3 | ⌈ʒ ● p. |
| Mean | 760.09 | 27.7 | 33.4 | 22.7 | 78.4 | ------------ | 9.8 | 3.2 | ------------------ | ------------------ | ------ | |
| Total | ------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 94.4 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °C. | °C. | °C. | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.76 | 28.7 | 34.1 | 23.3 | 73.5 | S quad. | 10 | 7.3 | Ci. NE | Cu. SWbyS, SW | ------ | ᗢ° p. |
| 2 | 59.84 | 26.8 | 32 | 22.3 | 87 | SW | --------- | 6.3 | Ci. E quad. | S.-Cu. SE, S | 2.5 | ⌓· ≡°d$^{2}$ a. ●°ᗢ$^{2}$ p. |
| 3 | 59.96 | 27.2 | 31.5 | 22.4 | 83.2 | SW, N | --------- | 3.7 | Ci. NE | Cu. E | ------ | ⌓$^{2}$ ≡ a. ᗢ° ↯° p. |
| 4 | 59.08 | 28.3 | 32.7 | 23.3 | 76.8 | Variable | 10 | 2 | Ci.-Cu. ENE | Cu. NE | ------ | ↯° ᗢ$^{2}$ ᗢ° p. |
| 5 | 58.74 | 27 | 32 | 22.6 | 84 | SW | 10.1 | 7.8 | Ci. NE | Cu., Fr.-Cu. NE | ------ | ⌓$^{2}$ ◯$^{2}$ a. ↯ p. |
| 6 | 59.24 | 26.6 | 32.6 | 22.8 | 85.5 | SW, W | 9.1 | 6.8 | Ci. ESE | Cu., Cu.-N. SE | ------ | ⌓°a ⌈↯°d°⌒°ᗢ$^{2}$ p. |
| 7 | 59.97 | 27.2 | 31.2 | 22.4 | 80.7 | NE, SW | 12.7 | 5.7 | Ci. | Cu. NE | ------ | ⌓$^{2}$ a. ◯$^{2}$ a. p. ᗢ$^{2}$ p. |
| 8 | 60.62 | 28.8 | 32.9 | 26 | 72.7 | NE quad. | 17.3 | 3.7 | Ci. | Cu. NE | ------ | ᗢ° a. ᗢ· ᗜ· p. |
| 9 | 60.63 | 27.8 | 30.2 | 24.8 | 80.2 | NE, N | 26.1 | 7.5 | Ci. | S.-Cu. NE | 7.2 | ●° ᗢ$^{2}$ a. ⌈↯●ᗢ$^{2}$ p. |
| 10 | 60.04 | 27.7 | 30.4 | 25 2 | 81.8 | NE, N | 28.6 | 7.8 | Ci.-Cu. E | S.-Cu. NE | 17.8 | ●° a p. ᗢ$^{2}$ ᗜ$^{2}$ p. |
| 11 | 59.28 | 27 8 | 30.4 | 24 | 81 | NE | 16.5 | 6.2 | Ci. | S.-Cu. NE | ------ | ● a. ᗢ$^{2}$ p. |
| 12 | 59.01 | 28.2 | 31.3 | 24.7 | 76 | NE, N | 17.8 | 8 | Ci. | S -Cu. NE | 15 | d°●°◯° a. ↯ ᗢ° p. |
| 13 | 59.28 | [illegible] | 28.6 | 24.5 | 84.3 | NE | 25 | 8.3 | Ci.-S. | N. NE | 8.7 | ● ⌈↯° a. d ↯° p. |
| 14 | 59.20 | 27.8 | 31.4 | 25.7 | 78.5 | NE quad. | 12.4 | 4 | Ci. | Cu. N | ------ | ● a. ↯ p. |
| 15 | 59.41 | 26.5 | 29.3 | 24.1 | 87 | N quad. | 14.5 | 7.7 | Ci. | Variable NE | 22.1 | ᗢ$^{2}$ a. ● a. p. ⌒° p. |
| 16 | 59.74 | 26.8 | 30.8 | 23.9 | 84 | N | 15.8 | 9.3 | A.-Cu. E | S.-Cu. E | ------ | ●° a. d° ↯° p. |
| 17 | 60.01 | 26.9 | 28.5 | 24 | 83.5 | NE, N | 17.6 | 7.7 | Ci. | S.-Cu. NE | 9.4 | ᗜ° ●° a. ↯ p. |
| 18 | 61.07 | 27 | 30 | 24.7 | 82.8 | NE | 25.8 | 10 | Variable | S.-Cu.,N. NE | 22.4 | ●° a. d° a. p. ● p. |
| 19 | 60.65 | 27.5 | 29.4 | 24.4 | 75.2 | NE | 38.1 | 6.5 | Ci. | S.-Cu. NE | 12.9 | ↙° a ● a. p. |
| 20 | 60.22 | 27.4 | 29.4 | 24.4 | 71.8 | NE | 35.8 | 6.8 | A.-Cu. NE | S.-Cu. NE | 1.3 | d° a. ●° d p. |
| 21 | 60.93 | 26.8 | 28.7 | 25 | 75.7 | NE | 30.6 | 5.3 | A.-Cu. NE | S.-Cu. NE | 2.5 | d$^{2}$ ●° a. |
| 22 | 61.62 | 27.2 | 29.7 | 25 | 75.3 | NE | 21.5 | 5.7 | A.-Cu. NE | S.-Cu. NE | 1 | ●° d$^{2}$ p. |
| 23 | 61.74 | 25.9 | 28.5 | 23.5 | 80.5 | NW | 17.1 | 6.8 | A.-Cu. NE | S.-Cu. NE | 1.5 | d° a. ●° p. |
| 24 | 61.60 | 26.1 | 30.7 | 22.2 | 81.8 | NE quad. | 8.2 | 8.2 | A.-Cu. ENE | S.-Cu. Variable | 15.2 | d° ●° a. ● p. |
| 25 | 61.73 | 26.2 | 29.4 | 22.7 | 81 | NE | 15.2 | 6 | Ci. | Cu. NE | ------ | ↯° p. |
| 26 | 61.70 | 26.2 | 29.4 | 23 | 82.8 | N quad. | 14.1 | 5.5 | Ci. | Cu., N. NE | .5 | d$^{2}$ d° a. ᗢ° p. |
| 27 | 61.96 | 27.6 | 30.7 | 23.2 | 73.3 | NE, E | 12.7 | 3 | Ci. | Cu. NE | ------ | |
| 28 | 62.16 | 26.5 | 29.4 | 21.7 | 75.5 | NE | 14.8 | 5.7 | A.-Cu. ENE | S.-Cu., Cu. NE | 2.5 | ᗢ° d$^{2}$ p. |
| 29 | 62.06 | 26.3 | 28.1 | 24 | 83.8 | NE quad. | --------- | 10 | Ci. | S.-Cu. NE | 18.2 | ● a. d ↯ p. |
| 30 | 61.71 | 26.6 | 28.8 | 23 | 81.3 | NE | 19.9 | 8.7 | A.-Cu. E | S.-Cu., N. NE | 4.4 | ᗢ$^{2}$ ● a. ᗢ° d$^{2}$ p. |
| 31 | 60.96 | 27.2 | 29 | 25.1 | 81.7 | NE | 24.3 | 8.7 | A.-Cu. NE | S.-Cu. NE | 4.8 | ●° a. p. ⌒$^{2}$ ᗢ° p. |
| Mean | 760.38 | 27.1 | 30.4 | 23.8 | 80.1 | ------------ | 18.6 | 6.7 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 169.9 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °C. | °C. | °C. | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 757.90 | 27.9 | 33.6 | 24.5 | 79.7 | SW | 7.4 | 8.7 | Ci.-S. | Cu. SSW | ------ | ᗜ ⌓° p. |
| 2 | 59.98 | 27.2 | 33.3 | 22 8 | 84 7 | Variable | 4.6 | 3.7 | Ci. | Cu. S | ------ | ⌓ a. |
| 3 | 60.12 | 27.2 | 33 | 22.9 | 84.3 | ENE, NE | 5.9 | 2.7 | Ci. | Cu. ENE, NE | ------ | ⌓ a. ⌓° p. |
| 4 | 59.14 | 27.2 | 32.8 | 22.9 | 84.7 | NE, NNE | 5.2 | 2.7 | Ci. | Cu. NE | ------ | ⌓ ≡ a. ↯° p. |
| 5 | 59.01 | 27.2 | 32.8 | 23.3 | 85.3 | NE | 5.2 | 6 | Ci., Ci.-S. | Cu. NE | ------ | ⌓ a. T ᗜ p. |
| 6 | 59.34 | 27.1 | 32.9 | 23 | 85 | NNE, ENE | 4.7 | 3 | Ci. | Cu. NE | ------ | ⌓ a. T ↯ p. |
| 7 | 60.17 | 27 | 32.8 | 23 | 84.8 | ENE | 6.7 | 2.7 | Ci. | Cu. E, NE | ------ | ⌓ a. |
| 8 | 60 80 | 27.4 | 32.6 | 23.1 | 80.3 | NE | 8.2 | 3.5 | Ci. | Cu. E, NE | .5 | ⌓ a. |
| 9 | 60.90 | 28 | 30 8 | 25.2 | 84.2 | NE, NNE | 13.5 | 9 | Ci.-S. | Cu., S.-Cu. NE | 5.3 | ●° a. ● p. d° a. p. |
| 10 | 60.01 | 28.2 | 31.5 | 26 | 83 | NE, NNE | 14 | 6.5 | Ci. | Cu. NE | 8.9 | d° a. ● a. p. |
| 11 | 59.46 | 27.8 | 31.8 | 24.8 | 82.2 | E quad. | 8.2 | 4.7 | Ci. | Cu. NE | 5.6 | ⌓ ● a. ●° p. |
| 12 | 59.14 | 27.1 | 32 3 | 24 | 87.3 | NNE | 7.9 | 7.7 | Ci. | Cu. NE | 47.9 | ●° a. ●$^{2}$ T ↯ p. |
| 13 | 59.28 | 26.6 | 30.3 | 24.5 | 89.8 | NNE | 11.9 | 9 | Ci.-S. | S.-Cu. NNE | 25.2 | T ● a d ↯ p. |
| 14 | 59.34 | 26.8 | 31.8 | 22.9 | 85.5 | NE | 5.2 | 4 | Ci. | Cu. NE | ------ | ⌓· d° a. p. ↯ p. |
| 15 | 59.51 | 26 | 31.5 | 22.1 | 89 | NE | 6.5 | 5.3 | Ci. | Cu. E, NE | 82.3 | ⌓$^{2}$ d a. ●° a. p. |
| 16 | 59.78 | 26.2 | 31.2 | 23.8 | 90.5 | NE, SW | 5.5 | 6.2 | Ci. | Cu. E | 29 | ●· a. ●° ↯° p. |
| 17 | 60.18 | 26.4 | 31.8 | 23.2 | 87.7 | NE | 7.5 | 8.3 | Ci., Ci.-S. | Cu. NE | 54.1 | ⌓$^{2}$ a. ●$^{2}$ ⌒° p. |
| 18 | 61.26 | 27.2 | 30.8 | 24 | 82.8 | E, ENE | 20.2 | 9 | Ci. | Cu. ENE | 6.3 | ●· d a. ●° p. |
| 19 | 60.84 | 27.4 | 30.3 | 24.8 | 79 | ENE, NE | 24.6 | 8.2 | Ci. | Cu., S.-Cu. NE | 17 | ●° a. ● p. |
| 20 | 60.52 | 27.3 | 30.3 | 23.9 | 74.8 | NE | 21.5 | 6.3 | Ci., Ci.-S. | Cu. NE | ------ | ● a. ●° p. |
| 21 | 61.10 | 27.1 | 30.4 | 23.9 | 72 7 | ENE | 17.1 | 4.3 | Ci. | Cu. NE | 1 | p a. |
| 22 | 61.84 | 27.4 | 30.8 | 23.2 | 72.7 | NNE | 9.7 | 5.7 | Ci. | Cu. NE | .3 | p° ↯° p. |
| 23 | 61.73 | 26.3 | 31 | 23 | 82 | ENE | 7.7 | 6.8 | Ci.-S., Ci. | Cu. E, ENE | 2.3 | p° ● d a. ●° p. |
| 24 | 61.70 | 25.8 | 30 | 23 | 85.2 | E quad. | 6 | 8.3 | Ci.-S. | Cu. E, NE | 3.8 | d ● p. |
| 25 | 61.83 | 26 | 31.2 | 22.2 | 84.3 | Variable | 5.5 | 2.5 | Ci. | Cu. E | 11.9 | |
| 26 | 61.87 | 26 | 31 | 21.5 | 83.8 | E | 6.8 | 5.7 | Ci. | Cu. E | 4.5 | ● a. |
| 27 | 62.17 | 25.9 | 30.8 | 22.3 | 82.8 | E | 6.2 | 3 | Ci. | Cu. E | ------ | ● a. ≡° p. |
| 28 | 62 48 | 25.6 | 30.5 | 21.6 | 87 | NE | 7.6 | 7.5 | Ci. | Cu. NE | 2.3 | ⌓ a. ●° d p. |
| 29 | 62.18 | 26 | 28.8 | 24.8 | 91.7 | ENE | 11.4 | 9 | Ci.-S. | S.-Cu. ENE | 22.9 | ● a. p. |
| 30 | 62.02 | 26.7 | 30 | 24 | 86 | NE | 12.5 | 8.8 | Ci.-S. | Cu. NE | 3.9 | ●° a. p. |
| 31 | 61.08 | 27.5 | 31.2 | 24.9 | 82.5 | NE | 13 | 4.7 | Ci. | Cu. NE | 3.3 | ● a. ●° ⌒ ↯ p. |
| Mean | 760.54 | 26.9 | 31.4 | 23.5 | 83.7 | ------------ | 9.6 | 5.9 | ------------------ | ------------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | --------- | --------- | ------------------ | ------------------ | 338.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct | | 0-12. | 0-10. | | | mm. | |
| 1 | 757.82 | 25.4 | 29.5 | 21.6 | 90.8 | SSW | 1.7 | 8.3 | Ci.-S. NW | Cu. SSW, SW | 1.8 | ● a. p. ⊍° p. |
| 2 | 59.94 | 27.1 | 32 | 2[illegible].2 | 85.7 | SW | 1 | 6 | Ci.-S. SE, E | Cu. SW | -------- | ⊕² p. |
| 3 | 60.09 | 27.4 | 33.3 | 23 | 84.3 | NNE | 1.3 | 5.2 | Ci. | Cu. NE | -------- | Ω: a. ⌒ ☇ T p. |
| 4 | 59.10 | 27.7 | 33 | 23.4 | 83.2 | NE | 1.2 | 5.2 | Ci. | Cu. WNW, NE | -------- | Ω² ≡° a. |
| 5 | 59.12 | 27.2 | 32.4 | 23.9 | 84.7 | WNW | 1.3 | 6.8 | Ci.-S., Ci. E | Cu. WNW | -------- | Ω ≡° a. ☇ p. |
| 6 | 59.31 | 27 | 33.3 | 23.3 | 83.8 | NNE, W | 1.7 | 7.3 | Ci. ENE | Cu.-N. SW, W | 1 | Ω a. T ☇ ⊍ d p. |
| 7 | 59.94 | 27.1 | 33.4 | 22.4 | 80.7 | NE | 1.3 | 6.3 | Ci. SE | Variable | -------- | Ω ≡ a. ☇ T d° p. |
| 8 | 60.74 | 27.2 | 33 | 22.4 | 78.7 | NE | 1.5 | 4.7 | Ci. | Cu. E | -------- | Ω a. p. ⊕° p. |
| 9 | 60.82 | 27.6 | 33.2 | 23.5 | 79 | ESE | 1.3 | 4 | Ci. SE, NE | Cu. E | -------- | Ω a. p. |
| 10 | 60.18 | 27.8 | 33.6 | 23.4 | 77.5 | NE | 2.2 | 5.7 | Ci. SE | Cu. NE | -------- | ☇ T p. |
| 11 | 59.37 | 27.9 | 33.7 | 23 | 77.3 | NE quad. | 1.7 | 5.5 | Ci. | Cu. NE | -------- | Ω a. ☇ T ⊕° p. |
| 12 | 59.23 | 27.2 | 34 | 24.2 | 83.5 | NE | 1.3 | 6.2 | Ci.-S. | Cu. NE | 6.9 | ⊕° Ω° a. ● ☈ p. |
| 13 | 59.39 | 27 | 32 | 24 | 83.5 | NE quad. | 1.3 | 7 | Ci.-S. SE | N., S.-Cu. E, NE | -------- | ◯: ☇ p. |
| 14 | 59.21 | 27.6 | 34 | 22.8 | 82 | Variable | 1 | 6.7 | Ci. | Cu. NE | 29 | Ω ≡ a. ● ☈ ☇ p. |
| 15 | 59.49 | 26.9 | 32.5 | 22 | 82.5 | SW | 1.3 | 6.3 | Ci. | Cu. W | -------- | ≡ a ☇ p. |
| 16 | 59.79 | 25.8 | 32 | 23 | 90.2 | E quad. | 1.3 | 6.7 | A.-Cu. SE | N., Cu. ESE, E | 2.8 | Ω ≡ a. p ☇ ☈ p. |
| 17 | 60.22 | 26.1 | 32.8 | 22.8 | 87 | NE | 1.7 | 5.2 | Ci.-S. SE | Cu. ENE, NE | 13 | Ω: ≡° a. ● ☇ T p. |
| 18 | 61.62 | 25.4 | 30.2 | 22.4 | 86.7 | ENE | 1.8 | 6 | A.-Cu. SE | Cu. E | .3 | d° a. Ω p. |
| 19 | 60.93 | 25.9 | 32.2 | 21.5 | 80.3 | ENE | 2 | 5.5 | A.-Cu. ESE | Cu. NE, E | -------- | Ω a. p. |
| 20 | 60.46 | 25.8 | 33 | 21 | 76.8 | NE | 2 | 3.8 | A.-Cu. ESE | Cu. E | -------- | ≡° a. Ω a. p. |
| 21 | 60.90 | 25.2 | 31.7 | 20.8 | 79.2 | NE quad. | 1.8 | 3.3 | A.-Cu. E | Cu. ENE, NE | -------- | Ω: a. Ω p. |
| 22 | 61.74 | 25.6 | 31.2 | 20.5 | 77.7 | E quad. | 1.5 | 3.2 | Ci. | Cu. NE | -------- | Ω a. p. |
| 23 | 61.96 | 24.8 | 30.4 | 22.6 | 85.8 | NE | 1 | 5.3 | Ci.-S. ESE | S.-Cu. E | 3.3 | ● p. |
| 24 | 61.66 | 25.8 | 31.4 | 22.5 | 81.2 | E | 2 | 7.7 | A.-Cu. ESE | N., Cu. E | .3 | d° a. p. |
| 25 | 61.72 | 26 | 31.6 | 23 | 83.5 | E quad. | 2.2 | 6.5 | A.-Cu. E | Cu. ESE | -------- | |
| 26 | 61.63 | 26.4 | 32.7 | 21.2 | 77.3 | NE | 1.2 | 3.8 | Ci. | Cu. E quad. | -------- | ≡° a. Ω a. p. |
| 27 | 61.92 | 26.4 | 33.1 | 21.5 | 78.2 | NE | 1.2 | 3.7 | Ci. | S.-Cu. E | -------- | Ω a. p. |
| 28 | 62.38 | 26.4 | 32.7 | 21 | 77.5 | NE quad. | 1.3 | 2.8 | Ci. | S.-Cu. | -------- | Ω: ≡° a. Ω p. |
| 29 | 62.02 | 26.6 | 33.4 | 21.4 | 77.2 | NE | 2 | 3.8 | Ci. | Cu. E quad. | -------- | ≡ a. Ω a. p. |
| 30 | 61.99 | 26.6 | 33.2 | 21.5 | 76 | NE quad. | 2 | 3.7 | Ci. | Cu. NE | -------- | Ω a. p. |
| 31 | 61.17 | 26.8 | 33.7 | 21.2 | 77.7 | NE | 1.5 | 4.2 | A.-Cu. E | Cu. NE | -------- | Ω a. |
| Mean | 760.51 | 26.6 | 32.5 | 22.4 | 81.6 | ------------ | 1.5 | 5.4 | ------------ | ------------ | -------- | ------------ |
| Total | -------- | -------- | -------- | -------- | -------- | ------------ | -------- | -------- | ------------ | ------------ | 58.4 | ------------ |

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km p.h. | 0-10. | | | mm. | |
| 1 | 757.27 | 24.2 | 28.1 | 22.1 | 96.3 | SE, S | 10.4 | 10 | A.-Cu. | N. SW | 30.1 | ● T° a. p. ☇ p. |
| 2 | 59.40 | 26.7 | 32.5 | 22.3 | 88.7 | SE | 7.2 | 7.2 | A.-Cu. | S.-Cu. | -------- | d° a. ∞ p. |
| 3 | 59.89 | 27.4 | 32.4 | 24 | 87.5 | NW quad. | 8.1 | 4.8 | Ci | Fr.-Cu. SE | -------- | ≡ a. ⊍° p. |
| 4 | 58.95 | 27.4 | 31.2 | 24.2 | 86.3 | NW | 9.6 | 3.7 | Ci.-S., A.-Cu. | S.-Cu. | -------- | ☇ p. |
| 5 | 58.85 | 27.8 | 31.4 | 24.4 | 83.3 | NW | 11.3 | 6.3 | Ci. | S.-Cu. | -------- | ☇ p. |
| 6 | 58.91 | 28.1 | 33.8 | 23.8 | 81.8 | Variable | 8.5 | 7.3 | Ci. | Cu., S.-Cu. SE | -------- | T° ⌒ p. |
| 7 | 59.65 | 27.8 | 34.4 | 23 | 84.2 | SE | 7.6 | 5.5 | Variable | S.-Cu. | -------- | ☇ T p. |
| 8 | 60.44 | 28.1 | 32.4 | 24.3 | 82.8 | Variable | 8 | 2.8 | Ci., Ci.-S. | Cu., S.-Cu. | -------- | |
| 9 | 60.42 | 28.4 | 34.6 | 23.4 | 78.7 | Variable | 6.6 | 2.2 | Ci. | Cu. | -------- | |
| 10 | 59.73 | 28.6 | 34.6 | 24.1 | 78.3 | Variable | 7.1 | 3.7 | Ci. | Cu. | -------- | |
| 11 | 58.98 | 28.5 | 35.2 | 23.9 | 80.5 | Variable | 8.7 | 3.8 | Ci. | Cu., S.-Cu. | -------- | ☇ T p. |
| 12 | 58.79 | 28.8 | 34.6 | 24.3 | 81 | SE, NW | 10 | 6.8 | A.-Cu. | Fr.-Cu. SE | -------- | ⊍ ⊕ ≡° a. ☇° T° p |
| 13 | 58.85 | 28.9 | 34.2 | 24.9 | 82.2 | NE quad. | 7 | 6.8 | Ci., A.-Cu. | Cu. E, SE | -------- | ☇: T p. |
| 14 | 58.78 | 28.2 | 33.4 | 24.9 | 85.5 | Variable | 8.6 | 6.8 | Ci. | S.-Cu. SE | -------- | ☇ T p. |
| 15 | 59.03 | 27.5 | 34.1 | 23.2 | 85.3 | SE quad. | 8.5 | 5 | A.-Cu. | S.-Cu. | -------- | ☇° p. |
| 16 | 59.29 | 26.8 | 34.6 | 24 | 89.2 | Variable | 6.7 | 6.3 | Ci. | Cu SE | 32 | ☇ ☈ p² p. |
| 17 | 59.84 | 26.6 | 32.6 | 23.8 | 90.3 | SE quad. | 8.3 | 6.3 | Ci., A.-Cu. | S.-Cu. SE | 3.8 | ☇ T° p° p. |
| 18 | 60.90 | 27.1 | 34 | 22.6 | 84.8 | SE quad. | 9.8 | 5 | Ci. | S.-Cu. | -------- | ☇° p. |
| 19 | 60.25 | 27.2 | 33.9 | 22.3 | 80.2 | SE, S | 9.3 | 2.3 | Ci. | Cu., S.-Cu. | -------- | |
| 20 | 59.76 | 27.4 | 34 | 22.3 | 78.2 | S quad. | 10.1 | 2.7 | Ci. | Cu., S.-Cu. | -------- | |
| 21 | 60.12 | 27.2 | 33.7 | 22.6 | 79 | SE | 9.3 | 2 | Ci. | Cu., S.-Cu. | -------- | |
| 22 | 61.13 | 26.5 | 32.2 | 21.4 | 84.5 | S quad. | 7.4 | 1 | ------------ | Cu., S.-Cu. | -------- | |
| 23 | 61.36 | 26.2 | 31.7 | 21.8 | 86.2 | Variable | 6.6 | 5 | A.-Cu. | S.-Cu. SE | -------- | Ω a. |
| 24 | 61.09 | 26.9 | 33.9 | 22.8 | 87.2 | Variable | 7 | 5.3 | A.-Cu. | S.-Cu. SE | 32 | d° p² p. |
| 25 | 61.19 | 26.8 | 33.5 | 22.9 | 89 | SE | 9.2 | 7 | A.-Cu. | Fr.-Cu., S.-Cu. SE | 39.6 | p° ●² p. |
| 26 | 61.36 | 27.3 | 32.2 | 23.4 | 85.5 | NW | 7.5 | 5.5 | Ci. | S.-Cu. SE | -------- | |
| 27 | 61.44 | 27.9 | 33.6 | 23.2 | 80.3 | Variable | 9.5 | 1.5 | ------------ | Cu., S.-Cu. | -------- | |
| 28 | 61.85 | 26.9 | 33.4 | 22.1 | 84.3 | NE quad. | 8.1 | 2 | ------------ | Fr.-Cu., S.-Cu. | -------- | |
| 29 | 61.61 | 27.4 | 33.6 | 22.1 | 79.8 | Variable | 7.3 | 1.3 | Ci. | Cu., S.-Cu. | -------- | |
| 30 | 61.42 | 27.4 | 34.4 | 22.3 | 79.3 | Variable | 7.6 | .8 | Ci. | Cu. | -------- | |
| 31 | 60.68 | 27.6 | 33.4 | 22.5 | 74.7 | SE, N | 10.6 | 2.3 | ------------ | Cu. | -------- | |
| Mean | 760.04 | 27.4 | 33.3 | 23.2 | 83.7 | ------------ | 8.4 | 4.5 | ------------ | ------------ | -------- | |
| Total | -------- | -------- | -------- | -------- | -------- | ------------ | -------- | -------- | ------------ | ------------ | 137.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BAGUIO.[1]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| Day | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Perct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 634.90 | 16.7 | 19.3 | 15.2 | 95.7 | SW quad. | 33.2 | 10 | A.-S. | N. SWbyS | 46.5 | ↙° a. ≡ p. ● a. p. |
| 2 | 37.52 | 18.5 | 22.8 | 15.6 | 87.3 | Variable | 11 | 9.4 | Ci.-S. | S.-Cu. SSW | -------- | d ≡² p. |
| 3 | 37.90 | 18.4 | 23.3 | 16 | 93.2 | E, NE | 11.7 | 8.9 | Ci. | S.-cf. NE | 7.7 | Ω² a. ⊤ ● ↯ ≡² p. |
| 4 | 36.89 | 18.2 | 23.3 | 16.2 | 88.7 | W quad. | 10.2 | 5.9 | Ci. | N. WNW | 5.9 | Ω a. ⊤° ≡² ● ↯ p. |
| 5 | 36.74 | 18 | 23.2 | 15.1 | 87.3 | W quad. | 9.7 | 8.1 | Ci.-S. NEbyE, E | S.-Cu. WNW | 7.9 | Ω a. d ● p. |
| 6 | 36.79 | 17.5 | 22.3 | 15.5 | 95.5 | W quad. | 12.4 | 8.9 | Ci. | Fr.-Cu., S.-cf. SE | 3.6 | ●° a. ⌈↯° p ≡² p. |
| 7 | 37.46 | 18.4 | 23.3 | 16 | 90.2 | E quad. | 9.9 | 8.4 | A.-Cu. ESE | Fr.-N. | .5 | d° ≡° ⌈↯ ●° p. |
| 8 | 38.19 | 18.1 | 23.4 | 15.5 | 94.8 | Variable | 10 | 7.6 | Ci. | Variable | -------- | Ω a. ≡° a. p. |
| 9 | 38.42 | 18.6 | 23.8 | 15.9 | 85 | E, WSW | 11.3 | 3.7 | Ci. | Cu. | -------- | Ω a ≡° p. |
| 10 | 37.80 | 19.1 | 24.4 | 15.9 | 76.2 | E | 10.6 | 6.7 | Ci. | Cu. | -------- | Ω a. ≡² d p. |
| 11 | 37.16 | 18.4 | 23.8 | 15.6 | 91 | W | 10.6 | 6 | Ci. | Fr.-Cu. NEbyE | 2.5 | Ω² a. ≡² ⌈↯d ●°p. |
| 12 | 37.05 | 18.2 | 22.7 | 16 | 91.3 | Variable | 9.8 | 7.6 | Ci. | S.-Cu. E | 2.6 | ● ° ⊤ ° p. ≡² a. p. |
| 13 | 37.09 | 19 | 24.3 | 16 | 87.8 | W quad. | 9 | 7.3 | Ci.-S. SbyE | S -Cu. E | 1 | ⌒ ° ⊤ p ●° a. p. |
| 14 | 36.92 | 18.6 | 23.3 | 16 | 91 | W quad. | 9.6 | 7.3 | Ci. | S.-Cu. NE quad. | -------- | Ω² a p ⊤ ↯ p. |
| 15 | 36.81 | 18.1 | 23.9 | 15.9 | 93.7 | W | 8.2 | 7.9 | A.-Cu. S | S.-Cu. NW | 17.5 | Ω² a ●° d ≡² p. |
| 16 | 36.93 | 17.6 | 21.9 | 15.9 | 96 | E | 9.6 | 7.6 | Ci. | N. | 27.7 | Ω a. ● p. ≡ a. p. |
| 17 | 37.45 | 18 | 22.8 | 15.3 | 94.5 | W, E | 9.6 | 6 | Ci. | Cu., Fr.-Cu. | 5.6 | Ω a. ≡ ●° p. |
| 18 | 38.40 | 17.7 | 23.5 | 15.3 | 83.5 | SE quad. | 12.7 | 7.7 | A.-Cu. E | Variable | -------- | d ⊤ p. |
| 19 | 37.81 | 17.5 | 23.3 | 14.7 | 87.2 | E quad. | 14.4 | 6.9 | Ci. | Cu | 10.7 | ● ≡ d p. |
| 20 | 37.23 | 17.4 | 23.4 | 13.9 | 88.5 | E quad. | 15.4 | 5.9 | Ci. | S.-Cu. NEbyE | .3 | Ω a. d° ●° ≡² p. |
| 21 | 37.53 | 17.3 | 23 | 14.5 | 86.8 | E quad. | 12.4 | 6.7 | Ci. | Fr.-N. | -------- | Ω a. ≡ p. |
| 22 | 38.29 | 17 | 21.6 | 14.1 | 83.8 | Variable | 10.8 | 5.7 | Ci. | S.-Cu. E, NE | -------- | ≡ p. |
| 23 | 38.42 | 17 | 22.3 | 14 | 86.2 | Variable | 10.9 | 6.6 | A.-Cu. SWbyS | S.-Cu. NW | -------- | ≡ p. |
| 24 | 38.25 | 17.6 | 22.8 | 14.5 | 93.5 | Variable | 8.4 | 7.7 | Ci. | S.-Cu. SE | 4.6 | Ω a. ≡² ● p. |
| 25 | 38.43 | 17.3 | 22.2 | 15.1 | 94.3 | W quad. | 7.7 | 6.6 | A.-Cu. S | S -Cu. | -------- | Ω ≡² a. d° p. |
| 26 | 38.59 | 18 | 24.3 | 15 | 90 | SE, W | 9.6 | 8.7 | Ci., A.-Cu. | S.-Cu. WNW, W | -------- | Ω a. ≡ p. |
| 27 | 38.83 | 17.7 | 22.8 | 14.9 | 91.8 | Variable | 8.7 | 7.3 | Ci. | S -Cu. NW | -------- | Ω² a. ≡ p. |
| 28 | 39.16 | 17.6 | 22.4 | 14.6 | 93.7 | E quad. | 8.9 | 9.1 | -------- | S -Cu. NW | -------- | Ω² a. ≡² a. p. |
| 29 | 39 | 17.9 | 23 | 15 | 92.3 | Variable | 10.3 | 6.4 | Ci. | Cu. | -------- | Ω a ≡ p. |
| 30 | 38.94 | 18 | 23.2 | 14.7 | 90.2 | E | 11.6 | 5 | Ci. | Cu. | -------- | Ω² a. ≡° ⊤ p. |
| 31 | 38.36 | 18.1 | 24.3 | 14.1 | 84.7 | SE | 11.9 | 5.6 | Ci. | S.-Cu. E | -------- | Ω² a. ≡ p. |
| Mean | 637.72 | 17.9 | 23 | 15.2 | 89.9 | -------- | 11.3 | 7.2 | -------- | -------- | -------- | |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 144.6 | |

[1] The barometric readings of this station are not reduced to sea level.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Perct. | | 0-12. | 0–10. | | | mm. | |
| 1 | 756.22 | 24 | 25 | 21 | 88.7 | SE, ESE | 2.8 | 10 | Ci.-S. | N. SE, S | 53.6 | ●² a. p. ψ p. |
| 2 | 59.06 | 27 | 31.1 | 22.5 | 76.8 | S quad. | 1.2 | 8.7 | Ci.-S. | S.-Cu. S | -------- | ↯ a. ψ p. |
| 3 | 59.93 | 26.9 | 31 | 22.7 | 82.7 | Variable | 1.2[1] | 4[1] | Ci. | Fr.-Cu. W | -------- | Ω a. ψ² p. |
| 4 | 58.98 | 26.4 | 31.4 | 21.4 | 83.7 | N quad. | 1[2] | 3.8[2] | Ci., Ci.-S. | Fr -Cu. N | -------- | Ω² ≡° a. ↯ p. |
| 5 | 58.91 | 26.3 | 31.5 | 21.8 | 83.5 | N.E | 1.5[2] | 5.2[2] | A.-Cu. NW | S.-Cu. N | -------- | Ω² ≡° a. |
| 6 | 58.79 | 26.6 | 31.4 | 21.6 | 81.7 | Variable | 1.2[2] | 5.8[2] | Ci.-S. | Cu., S.-Cu. | -------- | Ω² ≡° a. ↯ ψ p. |
| 7 | 59.54 | 26.9 | 31.6 | 22.5 | 80.2 | NW quad. | 1[2] | 4.8[2] | Ci. | Fr -Cu. W | -------- | Ω a. |
| 8 | 60.37 | 27.1 | 31.8 | 22.5 | 79.3 | NW quad. | 1.2[2] | 2.2[2] | Ci. | Fr.-Cu. NW | -------- | Ω² a. |
| 9 | 60.39 | 27.2 | 32.2 | 22.4 | 79.7 | Variable | .6[1] | 1.6[1] | Ci.-S. | Cu. E | -------- | Ω° a. p. |
| 10 | 59.51 | 27.9 | 33.6 | 22.2 | 70.3 | NW quad. | .8 | 1.3 | Ci.-S. | Fr -Cu. ENE | -------- | Ω° a. |
| 11 | 59.03 | 27.7 | 32.6 | 23.2 | 74.2 | Variable | .5 | 4 | Ci.-S. | Cu.-N. ESE | -------- | ⌈↯° p. |
| 12 | 59 | 27.6 | 32.5 | 22.8 | 78.8 | Variable | .7 | 4.3 | A.-Cu. | Cu. N | -------- | ⌈↯° d° p. |
| 13 | 58.90 | 27.2 | 32.6 | 22.7 | 81.3 | NW quad. | .8 | 2.5 | Ci. NW | Cu., S.-Cu. | -------- | ↯° p. |
| 14 | 58.83 | 26.9 | 32.4 | 22.4 | 80.2 | N quad. | .7 | 2.3 | Ci.-S. | Cu. NE | -------- | Ω° a. |
| 15 | 58.93 | 26.4 | 31.7 | 22.2 | 80 | N | .5 | 2.8 | Ci.-S. | Cu. ESE, N | -------- | |
| 16 | 59.14 | 26.8 | 31.8 | 21.8 | 78.7 | NNW | .5 | 1.7 | Ci.-S. | Cu. ESE | -------- | Ω° a. |
| 17 | 59.64 | 26.6 | 31.7 | 21.9 | 79 | N quad. | 1.2 | 2 | Ci.-S. | Fr.-Cu. ENE | -------- | |
| 18 | 60.74 | 27.7 | 34.7 | 21.4 | 69.7 | Variable | .5 | 2.7 | Ci.-S. | S.-Cu. NE | -------- | |
| 19 | 60.16 | 27.5 | 32.8 | 21.7 | 66 | N quad. | 1.2 | .8 | Ci. | Fr.-Cu. NE | -------- | |
| 20 | 59.62 | 28.4 | 33.4 | 25.5 | 55.2 | NE | 3 | 1.7 | A.-Cu. ESE | Fr.-Cu. NE | -------- | |
| 21 | 60.14 | 28 | 32.9 | 23.3 | 56.5 | NE | .5 | .5 | Ci. | S.-Cu. NE | -------- | |
| 22 | 61.28 | 26.7 | 31.4 | 22.5 | 63.8 | NE quad. | .8 | .5 | Ci.-S. | Cu. | -------- | |
| 23 | 61.29 | 26.5 | 32.2 | 22 | 71.7 | NW quad. | .7 | 3 | Ci -S. | S.-Cu. SE | -------- | |
| 24 | 60.96 | 27.1 | 32.6 | 22.9 | 72.7 | SE, NNW | .7 | 3.2 | A.-Cu. S | S -Cu. NNW | -------- | |
| 25 | 61.19 | 27.1 | 31.7 | 23 | 79.8 | Variable | .5 | 4.8 | A.-Cu. | Cu. NW | .5 | d° p. |
| 26 | 61.51 | 26.7 | 32.3 | 21.9 | 83.8 | N, WNW | .5 | 3.3 | A.-Cu. | Cu. NW | -------- | |
| 27 | 61.61 | 26.1 | 32.1 | 20.5 | 80.5 | NW quad. | .7 | 1.2 | Ci. | Fr.-Cu. NW | -------- | Ω a. |
| 28 | 61.94 | 26.6 | 32 | 21.2 | 77.8 | Variable | .5 | 1.8 | Ci. | Cu. SW | -------- | Ω a. ψ° p. |
| 29 | 61.63 | 27.3 | 32.1 | 22.4 | 75.2 | N quad. | .8 | 2.7 | Ci. SW | Cu. NNW | -------- | |
| 30 | 61.50 | -------- | -------- | 22.3 | -------- | NW quad. | .7 | 2.8 | A.-Cu. ESE | Cu. NNE | -------- | |
| 31 | 60.80 | -------- | -------- | -------- | -------- | Variable | .7 | 4.2 | Ci.-S. | Cu. ESE | -------- | |
| Mean | 759.99 | 26.9 | 31.9 | 22.3 | 76.3 | -------- | .9 | 3.2 | -------- | -------- | -------- | |
| Total | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | -------- | 54.1 | |

[1] Deduced from five observations.

[2] Deduced from four observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### TUGUEGARAO.

[$\phi=17°\ 36'$ N; $\lambda=121°\ 40'$ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12* | *0-10.* | | | *mm.* | |
| 1 | 755.88 | 26.7 | 33.5 | 22.8 | 84.5 | S quad. | 1.7 | 8 | Ci.-S. | Cu. S | | d° ⌒$^{2}$ a. d ⌣ p. |
| 2 | 59.06 | 27.5 | 35.3 | 22.5 | 82.7 | Variable | .5 | 6.3 | Ci.-S. | Variable | | Ω a. < p. |
| 3 | 59.82 | 27.5 | 34.2 | 23.3 | 83 | Variable | .8 | 6.2 | Ci., Ci.-S. | Cu. S | | Ω$^{2}$ ≡ a. |
| 4 | 58.[illegible]4 | 27.3 | 33 5 | 23.3 | 82.3 | NW quad. | 1.2 | 5 | | Cu. SE | | Ω a. < p. |
| 5 | 58.83 | 27 | 34.4 | 24 | 86.2 | NW, N | 1.2 | 7.7 | | Cu.-N. W, NW | 10.7 | Ω a. ● ☈ <$^{2}$ p. |
| 6 | 59.53 | 25.7 | 33 | 23.2 | 87.5 | SE, NW | .5 | 7.7 | Ci. | Cu.-N. SW, N | | ● a. d p. |
| 7 | 60.18 | 27 | 33.5 | 22.8 | 82.7 | E quad. | .8 | 5.7 | | Cu. S | | Ω$^{2}$ a. |
| 8 | 60.78 | 26.8 | 34.2 | 22.5 | 83.3 | NW | .5 | 4.3 | | Cu. S | | Ω$^{2}$ a. |
| 9 | 61.70 | 26.4 | 33.7 | 20.4 | 79.8 | NW | .8 | 2.2 | | Fr.-Cu. N | | Ω$^{2}$ a. |
| 10 | 61.23 | 26 | 31 | 22.5 | 88.2 | NW | .8 | 6.8 | | S.-Cu. NW | | Ω a. |
| 11 | 60.17 | 25.2 | 30.4 | 23 | 91.7 | NW | .8 | 8.2 | | Cu.-N | | d° a. |
| 12 | 59.71 | 26.5 | 32.5 | 23.5 | 86 | NW | .7 | 6.7 | Ci. | Cu.-N. S, N | | d° a. |
| 13 | 59.78 | 26.4 | 33.8 | 22.2 | 84 8 | N quad. | 1 | 5.5 | | Cu.,S-Cu. NNE, N | | Ω$^{2}$ ≡$^{0}$ a. |
| 14 | 59.69 | 25.1 | 28.4 | 23 | 90.3 | NW quad. | .8 | 7.7 | Ci.-S. | Cu.-N. N | 3.3 | Ω$^{0}$ a ● p. |
| 15 | 59.74 | 25.6 | 32.9 | 21.4 | 85.2 | NW quad. | 1.2 | 5.3 | Ci. | Cu. N | | Ω$^{2}$ ≡ a. |
| 16 | 59.88 | 25.9 | 32.3 | 21.8 | 84.3 | N quad. | .8 | 6 | | S.-Cu., Cu. N | | Ω ≡$^{0}$ a |
| 17 | 61.34 | 25 | 28.7 | 22.6 | 85.8 | NW quad. | 2.3 | 9.2 | | S.-Cu. N | 2.5 | Ω$^{2}$ ≡$^{0}$ d a. |
| 18 | 63.05 | 24.1 | 29.5 | 22 | 92.8 | NW | .7 | 9.5 | | Cu.-N., N. N, NW | 2.3 | d a ● a. p. |
| 19 | 62.72 | 24.5 | 29 | 21.6 | 87.3 | NW | 2 | 7.8 | | S.-Cu. NW | | Ω$^{0}$ d a. |
| 20 | 62.16 | 23.6 | 27.6 | 21 | 85 | N quad. | 2 | 7.8 | | S.-Cu. NE | 2.8 | Ω$^{2}$ d$^{2}$ a. |
| 21 | 62.14 | 24.4 | 31.3 | 20.5 | 82.3 | N quad. | 1.3 | 5.5 | | Cu. N | | Ω$^{2}$ a. |
| 22 | 62.82 | 23.3 | 28.5 | 18.4 | 86.3 | N quad. | .8 | 5 | | S.-Cu. | | Ω$^{0}$ a. |
| 23 | 62.24 | 25.5 | 32.5 | 21.3 | 82.3 | NW | .7 | 6.3 | | S.-Cu. NW | | Ω$^{2}$ a. |
| 24 | 62.01 | 25 | 31.4 | 21.7 | 81.2 | N quad. | 1 | 6.5 | | S.-Cu. NE | | Ω$^{2}$ a. |
| 25 | 61.79 | 25.9 | 33.5 | 0.5 | 81.2 | SE, N | .3 | 4.2 | Ci. | Cu. E | | Ω$^{2}$ ≡$^{0}$ a. |
| 26 | 61.56 | 26.5 | 34.5 | 21.2 | 81.5 | Variable | .7 | 1.7 | | Cu. NW | | Ω$^{2}$ ≡ a. |
| 27 | 61.93 | 25.8 | 34.3 | 20.1 | 80.7 | Calm | 0 | 1.8 | | Fr.-Cu. E | | Ω$^{2}$ a. |
| 28 | 62.73 | 25.6 | 32.8 | 20.6 | 80.2 | ENE, SW | .3 | 2.7 | A.-Cu. | Cu. N | | Ω$^{2}$ a. |
| 29 | 62.61 | 25.4 | 33.5 | 19.5 | 80.5 | NW | .5 | 1.5 | | Cu. E | | Ω$^{2}$ a. |
| 30 | 62.48 | 25.6 | 33.4 | 19.5 | 77.7 | NW | .3 | 1.2 | | Fr.-Cu. | | Ω$^{2}$ ≡ a. |
| 31 | 61.72 | 26.5 | 33.2 | 22 | 82.3 | SW | .2 | 6.5 | | Cu.-N. SW | | Ω$^{2}$ a. |
| Mean | 760.90 | 25.8 | 32.3 | 21.8 | 84.2 | | .9 | 5.7 | | | | |
| Total | | | | | | | | | | | 21.6 | |

### APARRI.

[$\phi=18°\ 22'$ N; $\lambda=121°\ 38'$ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Perct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 755.51 | 25.5 | 30.8 | 23 | 85.2 | S | 12.6 | 10 | Ci.-S. | S.-Cu. SW | | |
| 2 | 59.08 | 26.9 | 33.5 | 23.1 | 84 | S | 8.4 | 6.7 | Ci. E | S.-Cu. | | ⊤ < p. |
| 3 | 59.85 | 26.8 | 33 | 23.1 | 83.4 | E quad. | 6.1 | 2.5 | Ci. | Cu.-N., S.-Cu. | | Ω a. < ⊤ p. |
| 4 | 58.78 | 26.8 | 31 | 23.2 | 84.2 | Variable | 8.5 | 3 | Ci. | Cu.-N. N | | Ω a. < p. |
| 5 | 59.01 | 25.8 | 30.4 | 23.4 | 89 | NE | 11.6 | 7 | | Cu.-N. SW, NE | 15.8 | ≡$^{0}$ a. ● < ⊤ p. |
| 6 | 59.60 | 24.8 | 27.8 | 23.4 | 89.7 | NE | 13.4 | 10 | A.-Cu. S | Cu -N. NE | 50.6 | ●$^{2}$ a. ● p. |
| 7 | 60.19 | 25.7 | 30.3 | 23 | 87.5 | E quad. | 6.9 | 6 | Ci.-S. E | Cu.-N. | | ● a. |
| 8 | 60.85 | 26.2 | 30.7 | 22.8 | 82.7 | E quad. | 11.9 | .3 | | Cu.-N. S | | Ω a. |
| 9 | 61.94 | 26.4 | 31.5 | 22.4 | 81.7 | E quad. | 11.1 | .2 | | Cu. | 5.1 | Ω a p p. |
| 10 | 61.40 | 26.2 | 33.9 | 23.2 | 86.2 | NE | 13.4 | 7.2 | A.-Cu. E | Cu.-N. NE | 6.1 | ⌒ a. ● a. p. |
| 11 | 60.23 | 25.6 | 29.2 | 23.8 | 89.3 | E, NE | 12.2 | 7 | | Cu.-N. E | 7.1 | ● a. |
| 12 | 59.84 | 26.3 | 31.1 | 23.6 | 85.8 | NE | 9 | 4.2 | Ci.-S. | Cu.-N. NE | | Ω a. < p. |
| 13 | 59.98 | 26.5 | 30.8 | 23.5 | 84.5 | NE | 8.4 | 1.3 | Ci. | Cu.-N., S.-Cu. | 1.1 | Ω a. |
| 14 | 59.75 | 26.2 | 29.2 | 23.8 | 81.2 | NE | 13.5 | 10 | A.-Cu. E | S.-Cu. NE | 3.3 | ●$^{0}$ a. |
| 15 | 59.99 | 25.7 | 30 | 23 | 84.7 | NE quad. | 10.3 | 8.8 | A.-Cu. W | S.-Cu., Cu.-N. NE | 21.3 | ● a. |
| 16 | 60.26 | 24.8 | 29.6 | 22.5 | 86.7 | NE | | 7.2 | A.-Cu. W | Cu.-N. NE | 136.3 | ● a. ●$^{2}$ p. |
| 17 | 61.78 | 24 | 27.2 | 22.3 | 91.2 | NE | 29.7 | 10 | | N. NE | 21.6 | ●$^{2}$ a. ● p. |
| 18 | 63.32 | 24.1 | 25.7 | 22.1 | 87.3 | NE quad. | 18.4 | 10 | | S.-Cu. E | 2 | ●$^{0}$ a. p. |
| 19 | 62.90 | 24.9 | 28 | 22.6 | 76.3 | E quad. | 15.4 | 7.3 | A.-Cu. NE | S.-Cu. NE | .5 | d a. |
| 20 | 62.22 | 24.3 | 28.1 | 21.5 | 81.5 | E | 13.2 | 9.2 | A.-Cu. SE | S.-Cu. E, NE | 9.2 | ● a. p. |
| 21 | 62.37 | 25.6 | 29.8 | 21.7 | 71.2 | ENE | 14.1 | 1.2 | | Cu.-N. ENE | | |
| 22 | 62.79 | 24.1 | 27.6 | 20.6 | 82.3 | SW, ENE | 8.4 | 3.7 | A.-Cu. S, SE | S.-Cu. | | |
| 23 | 62.34 | 24.7 | 29.8 | 21.2 | 80.8 | NE quad. | 10.2 | .8 | A.-Cu. SE | Cu.-N. SE | | Ω a. |
| 24 | 62.28 | 25 | 29 | 21.4 | 74.7 | NE quad. | 11.1 | .7 | A.-Cu. W | S.-Cu. | | Ω a. |
| 25 | 61.54 | 24.9 | 29.8 | 20.6 | 81.2 | SE, NE | 8.9 | 0 | | | | Ω a. |
| 26 | 61.48 | 25.8 | 31 | 21.6 | 79.5 | NE | 10.1 | 1.2 | | S.-Cu. W | | Ω a. |
| 27 | 61.74 | 25.8 | 31.6 | 21 5 | 81.8 | SE, NE | 10.1 | 0 | | | | Ω a. |
| 28 | 62.80 | 25.4 | 31 | 20.7 | 79.2 | N quad. | 8.7 | .2 | | Cu. SE | | Ω a. |
| 29 | 62.68 | 26 | 30.8 | 22 | 75.3 | NW, NE | 9.2 | 0 | | | | Ω ≡$^{0}$ a. |
| 30 | 62.49 | 25.4 | 30.5 | 21.6 | 80.5 | NE | 10.2 | 2.7 | | S.-Cu., Cu.-N. E | | Ω a. |
| 31 | 61.67 | 26.4 | 30.8 | 22.2 | 81.5 | NE | 12.4 | .2 | | Cu.-N. | | Ω a. |
| Mean | 760.99 | 25.6 | 30.1 | 22.4 | 82.9 | | 11.6 | 4.5 | | | | |
| Total | | | | | | | | | | | 280 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a.m. | 2 p.m. | 6 a.m. | 2 p.m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | ------ | 21.8 | 95 | 73 | 7 | 6 | ------ | Ω ≡° a. |
| 2 | ------ | 20.6 | 91 | 66 | 6 | 8 | ------ | Ω a. |
| 3 | ------ | 21.6 | 95 | 75 | 5 | 4 | ------ | Ω ≡° a. ↯$^2$ p. |
| 4 | 33.7 | 22 | 92 | 74 | 5 | 6 | ------ | Ω a. p p. |
| 5 | 33.9 | 21 | 96 | 77 | 4 | 5 | ------ | Ω ≡° a. ⊕° p. |
| 6 | 33.5 | 20.4 | 94 | 78 | 4 | 5 | ------ | Ω a. |
| 7 | 33.9 | 21.2 | 90 | 72 | 4 | 4 | ------ | Ω a. |
| 8 | 33.5 | 21 | 91 | 77 | 4 | 6 | 2 | Ω a. ●° p. |
| 9 | 33.9 | 21.5 | 96 | 76 | 4 | 6 | 20.8 | Ω ≡° a. ● ⊕ p. |
| 10 | 33.5 | 21.2 | 97 | 73 | 8 | 8 | ------ | Ω ≡° a. ↯° ⊕ p. |
| 11 | 33.4 | 21.4 | 96 | 65 | 9 | 8 | ------ | Ω ≡° a. ↯° p |
| 12 | 34 | 22 | 95 | 65 | 8 | 6 | 3.6 | Ω ≡° a. ●° p. |
| 13 | 34.1 | 22 | 97 | 67 | 9 | 8 | ------ | Ω ≡° a. |
| 14 | 34.5 | 22 | 92 | 74 | 6 | 7 | ------ | Ω a. ↯° p. |
| 15 | 35.8 | 21.7 | 95 | 79 | 5 | 10 | 48.8 | Ω° a. ● a. p. |
| 16 | 32 | 21.5 | 97 | 72 | 7 | 10 | ------ | Ω° a. |
| 17 | 32.4 | 22.3 | 97 | 63 | 6 | 7 | ------ | Ω ≡° a. |
| 18 | 33.4 | 22.3 | 97 | 74 | 8 | 8 | ------ | Ω ≡° a d° a. p. |
| 19 | 34 | 21.5 | 96 | 73 | 8 | 10 | 6.1 | Ω ≡° ●° a. |
| 20 | 31.9 | 21 | 95 | 74 | 6 | 10 | 7.1 | Ω ≡° ●° p. |
| 21 | 31.9 | 21.1 | 96 | 73 | 6 | 8 | 7.9 | Ω ≡° a ●° a. p |
| 22 | 31.9 | 21.3 | 96 | 76 | 8 | 8 | 13.2 | Ω ≡° a. ⌒$^2$ ● p. |
| 23 | 33.3 | 21 | 93 | 80 | 8 | 8 | ------ | Ω ●° a. |
| 24 | 30.7 | 21.5 | 96 | 76 | 6 | 10 | ------ | Ω ≡° p a. |
| 25 | 30.8 | 20.2 | 93 | 78 | 6 | 10 | ------ | Ω a p p. |
| 26 | 32.2 | 21.4 | 96 | 74 | 10 | 8 | 13.2 | Ω ≡° a. ⊕$^2$ p. |
| 27 | 33 | 21.4 | 95 | 71 | 10 | 8 | ------ | Γ↯ ●° a. ↯$^2$ p. |
| 28 | 33.3 | 21.1 | 95 | 79 | 10 | 10 | 45.5 | Ω a. Γ↯ ●$^2$ p. |
| 29 | 33 | 20.9 | 96 | 75 | 10 | 6 | 21.6 | Ω ≡° a. ●° a. p. |
| 30 | 32.5 | 20.8 | 96 | 80 | 10 | 10 | ------ | Ω ≡° p a. d° p. |
| 31 | 31.6 | 21.5 | 97 | 72 | 10 | 10 | ------ | Ω ≡° a. d° a. p. |
| Mean | 33 | 21.4 | 94.9 | 73.6 | 7 | 7.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 189.8 | |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a.m. | 2 p.m. | 6 a.m. | 2 p.m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32 | 20.8 | 97 | 83 | 10 | 10 | ------ | Ω a. |
| 2 | 33.1 | 21.8 | 96 | 69 | 2 | 8 | 3 | Ω a. ⊤ ●° p. |
| 3 | 31.8 | 21.4 | 97 | 74 | 1 | 5 | ------ | Ω a. |
| 4 | 30.9 | 22.1 | 96 | 72 | 2 | 10 | 39.6 | Ω ●$^2$ a. p° p. |
| 5 | 31.3 | 20.5 | 95 | 68 | 1 | 8 | ------ | Ω a. |
| 6 | 30.9 | 20.5 | 95 | 78 | 0 | 4 | ------ | Ω a. |
| 7 | 31.5 | 21 | 96 | 70 | 0 | 4 | ------ | Ω a. |
| 8 | 31.8 | 22 | 91 | 85 | 1 | 5 | 6.1 | Ω a. ● p. |
| 9 | 31.3 | 21.3 | 96 | 85 | 0 | 9 | ------ | Ω a. |
| 10 | 31.3 | 22.2 | 96 | 79 | 3 | 6 | ------ | Ω a. |
| 11 | 30.7 | 23 | 97 | 94 | 1 | 10 | 32 | Ω a ●$^2$ p p. |
| 12 | 31.8 | 21.5 | 96 | 87 | 2 | 9 | 27.4 | d a ● p. |
| 13 | 30.8 | 22 | 96 | 88 | 10 | 10 | 32.3 | d ●$^2$ p. |
| 14 | 31.1 | 21.8 | 97 | 70 | 10 | 8 | ------ | |
| 15 | 30.7 | 22 | 95 | 80 | 3 | 10 | .5 | Ω a. p p. |
| 16 | 30.2 | 22 | 97 | 78 | 10 | 10 | ------ | Ω a. |
| 17 | 31.8 | 22 | 97 | 80 | 0 | 4 | ------ | Ω a. |
| 18 | 30.5 | 23 | 97 | 81 | 8 | 7 | ------ | Ω a. ⊤ p. |
| 19 | 32.3 | 22.6 | 96 | 71 | 9 | 9 | 9.1 | ⊤ a. |
| 20 | 31.8 | 23 | 97 | 97 | 10 | 10 | 59.2 | ●$^2$ a. d ⊤ a. p. |
| 21 | 31.3 | 23.5 | 94 | 90 | 10 | 10 | 13.5 | d a. ● a. p. |
| 22 | 31.4 | 22 | 97 | 83 | 10 | 4 | ------ | Ω a. |
| 23 | 32.1 | 21.8 | 96 | 81 | 2 | 10 | ------ | Ω a. p° p. |
| 24 | 29.5 | 23 | 94 | 79 | 4 | 10 | ------ | p° p. |
| 25 | 29.9 | 21.8 | 96 | 79 | 10 | 10 | ------ | Ω a. |
| 26 | 30.3 | 21.5 | 96 | 78 | 2 | 9 | ------ | Ω a. ⊤ ↯ p. |
| 27 | 30.9 | 21 | 97 | 74 | 10 | 7 | ------ | Ω a. ⊤ ↯ p. |
| 28 | 32.8 | 22.4 | 97 | 85 | 9 | 10 | .8 | Ω a. ●° p. |
| 29 | 29.7 | 21 | 94 | 98 | 1 | 10 | 52.3 | Ω a. ●$^2$ a. p. |
| 30 | 30.2 | 22.4 | 97 | 79 | 10 | 6 | ------ | ● a. |
| 31 | 32.9 | 22.2 | 95 | 68 | 7 | 4 | ------ | Ω a. |
| Mean | 31.2 | 21.9 | 95.9 | 80.1 | 5.1 | 7.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 275.8 | |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a.m. | 2 p.m. | 6 a.m. | 2 p.m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.8 | 23.2 | 86 | 56 | 6 | 2 | ------ | |
| 2 | 31 | 23.7 | 86 | 70 | 8 | 5 | 3.6 | Γ↯ ●° p. |
| 3 | 30.2 | 22.2 | 90 | 73 | 1 | 7 | ------ | ↯ p. |
| 4 | 32 | 23.5 | 86 | 80 | 10 | 9 | ------ | d a. Γ↯ p. |
| 5 | 30.5 | 22.3 | 82 | 69 | 6 | 4 | ------ | ⊤° p. |
| 6 | 30.2 | 22 | 77 | 69 | 1 | 2 | ------ | |
| 7 | 30 | 21.5 | 79 | 76 | 2 | 4 | ------ | |
| 8 | 30.6 | 23.5 | 83 | 78 | 3 | 4 | ------ | d p. |
| 9 | 30.5 | 22.6 | 85 | 72 | 1 | 2 | ------ | |
| 10 | 32.5 | 22.9 | 85 | 71 | 9 | 8 | ------ | d ↯ p. |
| 11 | 29.5 | 23 | 85 | 83 | 9 | 10 | .8 | d ●° p. |
| 12 | 30 | 22.4 | 86 | 75 | 5 | 9 | 3.6 | d Γ↯ p. |
| 13 | 31 | 23.2 | 90 | 73 | 8 | 4 | ------ | |
| 14 | 30.2 | 23 | 91 | 75 | 4 | 9 | ------ | d p. |
| 15 | 30.5 | 23.5 | 89 | 70 | 8 | 8 | ------ | |
| 16 | 30.6 | 23.4 | 93 | 74 | 9 | 9 | ------ | |
| 17 | 30.7 | 22.9 | 85 | 74 | 8 | 5 | ------ | |
| 18 | 31.4 | 23.4 | 85 | 78 | 6 | 9 | ------ | d ↯ p. |
| 19 | 32.9 | 23.3 | 90 | 72 | 9 | 8 | 4.8 | d a. ●° ↯ p. |
| 20 | 30.6 | 23 | 92 | 71 | 7 | 9 | ------ | ● d ⌒ a. |
| 21 | 31.1 | 23.4 | 91 | 73 | 9 | 10 | ------ | Γ↯ d a. |
| 22 | 31.6 | 23.4 | 91 | 65 | 3 | 8 | ------ | |
| 23 | 31.7 | 23.4 | 91 | 70 | 10 | 9 | ------ | |
| 24 | 29.5 | 23.6 | 87 | 76 | 10 | 9 | 1.8 | ●° a. |
| 25 | 31.1 | 22.5 | 86 | 72 | 4 | 2 | ------ | d a. |
| 26 | 30.4 | 22.6 | 84 | 73 | 6 | 2 | 2 | ●° p. |
| 27 | 31.5 | 23.4 | 92 | 69 | 10 | 5 | ------ | |
| 28 | 30 | 23 | 91 | 77 | 8 | 8 | .8 | Γ↯ a. ●° p. |
| 29 | 30.7 | 22.9 | 88 | 77 | 3 | 3 | ------ | |
| 30 | 30.2 | 23.9 | 92 | 68 | 10 | 3 | ------ | d a. |
| 31 | 32.9 | 22.8 | 94 | 64 | 8 | 3 | ------ | ↯ p. |
| Mean | 30.9 | 23 | 87.5 | 72.4 | 6.5 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 17.4 | |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a.m. | 2 p.m. | 6 a.m. | 2 p.m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.5 | 20.9 | 96 | 70 | 5 | 8 | ------ | ⊤ p. |
| 2 | 31.7 | 21.3 | 97 | 67 | 5 | 6 | ------ | |
| 3 | 32.5 | 21.5 | 97 | 70 | 5 | 5 | 17.5 | ● Γ↯ p. |
| 4 | 31.2 | 23.1 | 95 | 65 | 6 | 6 | ------ | |
| 5 | 31.3 | 21.1 | 96 | 65 | 5 | 7 | ------ | |
| 6 | 31.2 | 20.9 | 96 | 71 | 6 | 5 | ------ | |
| 7 | 31.6 | 21.8 | 92 | 78 | 6 | 8 | ------ | ⊤ p. |
| 8 | 32.1 | 20.1 | 97 | 62 | 6 | 5 | ------ | |
| 9 | 31.8 | 21.9 | 96 | 64 | 5 | 7 | 21.3 | ● Γ↯ p. |
| 10 | 32 | 21.4 | 96 | 60 | 6 | 6 | 87.1 | ●$^2$ Γ↯$^2$ p. |
| 11 | 31.1 | 21.9 | 95 | 88 | 9 | 10 | 15.7 | Γ↯ a. ● ⊤ p. |
| 12 | 32.2 | 21.2 | 98 | 62 | 6 | 5 | 13.5 | ● p. |
| 13 | 31.6 | 22 | 97 | 75 | 6 | 7 | 8.9 | ● ⊤ p. |
| 14 | 30.9 | 22.1 | 96 | 71 | 8 | 7 | ------ | |
| 15 | 32.1 | 21.7 | 98 | 71 | 6 | 5 | 7.9 | ● p. |
| 16 | 31.1 | 21.5 | 99 | 74 | 5 | 7 | 14.7 | ● ⊤ p. |
| 17 | 32.2 | 21.7 | 98 | 73 | 5 | 5 | 23.4 | ● Γ↯ p. |
| 18 | 31.2 | 22 | 96 | 74 | 7 | 6 | ------ | |
| 19 | 32.2 | 21.2 | 97 | 77 | 5 | 7 | ------ | |
| 20 | 32.7 | 22.2 | 97 | 69 | 6 | 6 | 14 | ● p. |
| 21 | 30.7 | 21.2 | 94 | 79 | 5 | 9 | ------ | |
| 22 | 31.5 | 21.9 | 96 | 75 | 5 | 6 | 18.3 | ● Γ↯ p. |
| 23 | 32.1 | 22 | 97 | 65 | 8 | 6 | ------ | d a. |
| 24 | 31.2 | 22.1 | 96 | 65 | 6 | 5 | 3.8 | ●° p. |
| 25 | 31.7 | 21.3 | 97 | 67 | 6 | 5 | 4.6 | ●° p. |
| 26 | 32.2 | 21.6 | 97 | 58 | 5 | 6 | ------ | |
| 27 | 32.9 | 22 | 96 | 60 | 5 | 5 | ------ | |
| 28 | 32 | 21.5 | 96 | 59 | 6 | 7 | 3.3 | ●° p. |
| 29 | 32.7 | 21.6 | 96 | 60 | 5 | 5 | 5.1 | ●° p. |
| 30 | 32.7 | 21.5 | 96 | 68 | 6 | 7 | ------ | |
| 31 | 32.2 | 22 | 95 | 66 | 6 | 5 | ------ | |
| Mean | 31.8 | 21.6 | 96.3 | 68.6 | 5.8 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 259.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAGAYAN, MISAMIS.

[$\phi$=8° 29′ N; $\lambda$=124° 38′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.8 | 21.4 | 95 | 59 | 3 | 3 | ------ | Ω² a. ⌒² ☈ p. |
| 2 | 31.9 | 22.5 | 89 | 68 | 2 | 4 | ------ | Ω° a d° ☇ p. |
| 3 | 31.8 | 22.5 | 88 | 66 | 2 | 8 | ------ | Ω² a. ☇ ⍦° p. |
| 4 | 31.9 | 23.6 | 92 | 89 | 3 | 10 | 13 | Ω a. ● ☈ d° p. |
| 5 | 31.5 | 21.5 | 91 | 67 | 2 | 2 | ------ | Ω a. ☇ p. |
| 6 | 32.1 | 21 | 85 | 63 | 3 | 3 | ------ | Ω a. ⍦ p. |
| 7 | 31.2 | 22 | 84 | 66 | 3 | 4 | 2 3 | Ω a. d² p. |
| 8 | 31 | 22.2 | 90 | 68 | 7 | 3 | 1.8 | Ω a. d ☇ p. |
| 9 | 31 | 22 | 94 | 71 | 2 | 5 | ------ | Ω ◌² a ☈ p. |
| 10 | 31.9 | 22.1 | 88 | 63 | 7 | 5 | 2.5 | Ω a. p ☈ p. |
| 11 | 32 | 22.5 | 94 | 73 | 9 | 10 | ------ | Ω a. |
| 12 | 31.6 | 22.9 | 92 | 64 | 3 | 4 | 11.2 | Ω a. d² ☇ p. |
| 13 | 31 | 21.6 | 95 | 73 | 3 | 9 | ------ | Ω a. ☈ p. |
| 14 | 32 | 21.4 | 87 | 66 | 2 | 8 | 3.8 | Ω a. ● p. |
| 15 | 31.4 | 22.1 | 93 | 69 | 6 | 7 | ------ | Ω a. ◌ d° ☇ p. |
| 16 | 30.8 | 22.3 | 87 | 72 | 10 | 9 | ------ | Ω a. ☇ p. |
| 17 | 31 | 21.4 | 91 | 71 | 2 | 6 | ------ | Ω a. ⌒ ☇ p. |
| 18 | 30 | 24 | 91 | 80 | 6 | 4 | .3 | Ω² a. ☈ d p. |
| 19 | 31 | 23.2 | 93 | 74 | 7 | 9 | .3 | Ω a. ☈ p. |
| 20 | 31.1 | 23 | 93 | 68 | 9 | 4 | .3 | d a. ☈ d p. |
| 21 | 31.2 | 23.6 | 96 | 58 | 9 | 6 | 17.8 | Ω ≡° a. ● ☈ p. |
| 22 | 29.3 | 23 | 96 | 74 | 4 | 7 | ------ | Ω ≡° a. ☇ p. |
| 23 | 30.1 | 21.5 | 89 | 70 | 2 | 3 | .1 | Ω² a. d ☇ p. |
| 24 | 30.8 | 23 | 90 | 71 | 7 | 3 | ------ | Ω a. ☈ p. |
| 25 | 30.7 | 21.6 | 94 | 66 | 2 | 2 | ------ | Ω a. ⌒° ☇ p. |
| 26 | 31 4 | 21.8 | 91 | 65 | 4 | 3 | ------ | Ω² a. ☇ p. |
| 27 | 30.9 | 21.4 | 88 | 76 | 2 | 3 | ------ | Ω² a. ☇ p. |
| 28 | 31.5 | 23.6 | 85 | 64 | 1 | 3 | ------ | Ω a. ☈ p. |
| 29 | 31 | 22 | 90 | 71 | 1 | 5 | ------ | Ω² a. ☈ p. |
| 30 | 31.1 | 22.2 | 92 | 66 | 1 | 3 | ------ | Ω² a. ☇ p. |
| 31 | 30.6 | 21.7 | 88 | 72 | 4 | 4 | ------ | Ω° a. |
| Mean | 31.2 | 22.3 | 90.7 | 69.1 | 4.1 | 5.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 53.4 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.4 | 22.9 | 86 | 55 | 1 | 5 | ------ | Ω a. ⊤ ⌒ ☇ p. |
| 2 | 31.8 | 22 | 91 | 68 | 3 | 8 | 2.3 | Ω a. ☈ ●° p. |
| 3 | 30 | 23.4 | 97 | 65 | 8 | 9 | ------ | Ω² d° a. ⊕ p. |
| 4 | 32.3 | 23.4 | 91 | 65 | 4 | 9 | ------ | Ω a. ⊤² d° ☇ p. |
| 5 | 30.7 | 22.9 | 97 | 64 | 2 | 7 | ------ | Ω a. ⊤ ☇° ⍦ p. |
| 6 | 31 | 22.8 | 87 | 58 | 3 | 7 | ------ | Ω a. ⊤ ☇ p. |
| 7 | 30.6 | 22.7 | 88 | 81 | 3 | 6 | 17.3 | Ω² a. ☈ ● d° p. |
| 8 | 30.1 | 23.3 | 92 | 66 | 8 | 7 | ------ | Ω² a. d° ☇ p. |
| 9 | 30.3 | 22.1 | 93 | 70 | 3 | 5 | .1 | Ω² a ●° ☇ p. |
| 10 | 30.1 | 23.8 | 97 | 82 | 10 | 9 | 13.2 | Ω² a. ⊤² ● ☇² p. |
| 11 | 27.7? | 23.4 | 93 | 79 | 10 | 10 | .3 | Ω² a. d° ●° p. |
| 12 | 29.5 | 23.4 | 97 | 86 | 8 | 10 | 7.9 | ↙° a. p. ⌉ ● p. |
| 13 | 29 | 23.1 | 94 | 75 | 8 | 9 | ------ | Ω² a. ⌒ p. |
| 14 | 30.1 | 24.4 | 94 | 66 | 10 | 10 | 2.5 | Ω a. ⊤ ●° d° p. |
| 15 | 29.7 | 23.5 | 95 | 75 | 8 | 8 | 4.1 | Ω a. ⊤ ●° p. |
| 16 | 29.6 | 23.5 | 92 | 75 | 9 | 10 | ---- | ● a ⊤ d° p. |
| 17 | 29.5 | 23 | 92 | 76 | 8 | 10 | 1.5 | ⊤ ●° d ☇ p. |
| 18 | 28.8 | 23.4 | 95 | 79 | 8 | 10 | 2.8 | ⊤² d ●° p. |
| 19 | 28.7 | 23.3 | 96 | 92 | 7 | 9 | 2.8 | Ω² a. ⊤ d° ●° ☇ p. |
| 20 | 29.9 | 22.6 | 95 | 71 | 9 | 9 | 32.5 | Ω² a. ⊤² ● d ☇ p. |
| 21 | 29 | 23.9 | 97 | 74 | 10 | 7 | .1 | ●² d° p a. ◌² p. |
| 22 | 28.7 | 23 | 95 | 74 | 6 | 7 | 2.3 | Ω a ⊕² ●° p. |
| 23 | 29.3 | 23 | 91 | 63 | 5 | 7 | .5 | Ω² a. ●° ⌒° p. |
| 24 | 29.3 | 23.2 | 87 | 67 | 7 | 7 | 1 | Ω a ⊤ ☇ ●° p. |
| 25 | 29.5 | 23.3 | 89 | 63 | 8 | 4 | ------ | Ω a p° p. |
| 26 | 29.6 | 23.1 | 94 | 68 | 3 | 5 | ------ | Ω a. |
| 27 | 29.5 | 21.5 | 96 | 73 | 2 | 10 | 4.3 | Ω a. ⊤ ●° d p. |
| 28 | 29.3 | 22.7 | 97 | 67 | 4 | 4 | ------ | Ω² a. ⊤² ●° ☇ p. |
| 29 | 29.7 | 23.1 | 97 | 92 | 10 | 10 | 9.7 | ≡ Ω a. ⊤● ☇ p. |
| 30 | 29.5 | 22.2 | 97 | 68 | 10 | 3 | ------ | Ω² ≡ a. p° p. |
| 31 | 29.2 | 24.1 | 97 | 72 | 5 | 4 | ------ | Ω ≡ p° a. ⊤ ⌒ p. |
| Mean | 29.8 | 23.1 | 93.5 | 71.9 | 6.5 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 105.2 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.8 | 22.8 | 78 | 73 | 10 | 9 | ------ | Ω a. |
| 2 | 32.1 | 23.6 | 89 | 70 | 5 | 5 | ------ | Ω a. ☇ p. |
| 3 | 32.2 | 24.1 | 85 | 65 | 10 | 9 | ------ | ☇² d° p. |
| 4 | 32.2 | 24.3 | 88 | 71 | 10 | 10 | ------ | d ⌒° a. ☈ ⍦° p. |
| 5 | 32 | 23.5 | 82 | 75 | 10 | 10 | 3 | Ω ●° a. ⍦̄ ⍦² ☇° p. |
| 6 | 31.7 | 23 | 79 | 65 | 10 | 9 | 18.5 | Ω a. ● ☇° p. |
| 7 | 30.4 | 23.5 | 83 | 72 | 10 | 5 | 46 2 | ☈ ● a. ☇ ●² p. |
| 8 | 30.5 | 22.2 | 97 | 77 | 10 | 4 | 35 | ☇ ●² a. ☈ ● p. |
| 9 | 31.3 | 22.9 | 95 | 69 | 10 | 5 | ------ | Ω² a. ☈° p. |
| 10 | 31.2 | 25.2 | 85 | 69 | 10 | 10 | ------ | ☈° a. p. ⍦° p. |
| 11 | 31.1 | 25 | 85 | 71 | 10 | 10 | ------ | ☈ d a. ○² ☇ ⍦ |
| 12 | 31.5 | 23.8 | 85 | 69 | 10 | 10 | 5.1 | d ●° a. ⍦° p. |
| 13 | 30.8 | 23.1 | 83 | 71 | 10 | 10 | ------ | Ω ⊕ a. ☇ p. |
| 14 | 32.2 | 23 | 83 | 74 | 10 | 10 | ------ | Ω a. ☈ p. |
| 15 | 31.3 | 22.6 | 89 | 65 | 10 | 7 | 8.9 | Ω² a. ◌ ☈° p. |
| 16 | 30 | 22.3 | 90 | 72 | 10 | 10 | 2.5 | ●° a. d p |
| 17 | 31.5 | 23.5 | 81 | 65 | 10 | 7 | 2.9 | Ω a. ☇ ●° p. |
| 18 | 30.6 | 24 | 82 | 79 | 8 | 10 | ------ | Ω a. d p. |
| 19 | 31.1 | 24.8 | 84 | 72 | 7 | 10 | 10.5 | ☇° a. p. ● p. |
| 20 | 30.5 | 23.2 | 81 | 72 | 10 | 10 | ------ | d° a. ⊕ a. p. ☇ p. |
| 21 | 30.7 | 24.8 | 74 | 63 | 10 | 10 | ---- | ◌ a. p. |
| 22 | 30.8 | 24.1 | 87 | 69 | 10 | 10 | 43.9 | Ω ○² a. ●² p. |
| 23 | 30.8 | 23.4 | 90 | 74 | 10 | 9 | ------ | Ω a. |
| 24 | 30.3 | 23.2 | 83 | 72 | 10 | 10 | ------ | Ω a. |
| 25 | 30.3 | 23.2 | 85 | 66 | 10 | 8 | 5.8 | Ω° d a. ☇ p. |
| 26 | 30.5 | 23 | 91 | 73 | 10 | 3 | ------ | ● a. ☇° d p. |
| 27 | 30.8 | 24.2 | 85 | 71 | 10 | 9 | .5 | d p. |
| 28 | 30.8 | 24.2 | 85 | 67 | 3 | 8 | ------ | ○ a. p. ⍦ p. |
| 29 | 31.2 | 24.4 | 86 | 71 | 10 | 10 | 2.3 | Ω° a. ○ ☇ p. |
| 30 | 31.1 | 24.8 | 90 | 71 | 10 | 10 | ------ | ☇ ●° a. ☇° p. |
| 31 | 31.2 | 25.3 | 86 | 67 | 10 | 8 | ------ | d a. ○° a. p. |
| Mean | 31.1 | 23.7 | 85.4 | 70.3 | 9.5 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 185.1 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.4 | 25.7 | 89 | 76 | 6 | 9 | 6.9 | ● ○ a. ⍦° p. |
| 2 | 33.2 | 24.6 | 96 | 84 | 7 | 8 | 15.5 | Ω a. ● a. p. ☇° p. |
| 3 | 31.4 | 24.8 | 95 | 73 | 9 | 8 | 5.6 | ● p. |
| 4 | 29.7 | 24.5 | 95 | 93 | 6 | 9 | 9.9 | ●° a. p² p. |
| 5 | 30.2 | ------ | 98 | 77 | 8 | 7 | 15.5 | ● a. ⌒² d° p. |
| 6 | 29.4 | 22.5 | 97 | 81 | 10 | 8 | 5.8 | ☈ ● a. ⍦ p. |
| 7 | 32.2 | 24.2 | 91 | 71 | 2 | 8 | 3.8 | d° a. p ⌒° ● p. |
| 8 | 31.1 | 24.5 | 97 | 94 | 2 | 9 | 14.7 | ● a. p. ⌒° p. |
| 9 | 32.6 | 24 | 96 | 82 | 4 | 8 | 27.2 | ● a p. ⍦° ⍦̄ p. |
| 10 | 31.3 | 24 | 95 | 93 | 4 | 8 | 33.5 | ●° ◌° a ● ⌒° ⍦° p. |
| 11 | 31.5 | 24.5 | 97 | 82 | 8 | 8 | 14.8 | ⍦° ⍦̄ ● a ●° ◌° p. |
| 12 | 31.6 | ------ | 99 | 78 | 10 | 9 | 2.5 | ● a. ◌ ⌒° p. |
| 13 | 28.8 | 24.9 | 93 | 84 | 10 | 9 | 9.4 | ⍦ Ω² ☇ ●° a. ◌ ⌒° |
| 14 | 31.6 | 24.8 | 95 | 82 | 6 | 6 | 3.6 | ● ⍦° a. ●° ⌒° p. |
| 15 | 31.6 | ------ | 96 | 76 | 4 | 6 | 3.3 | ●° a. p. ☇ p. |
| 16 | 32.6 | 24.1 | 91 | 71 | 8 | 6 | 3.8 | ⍦ a. ◌° ⌒° ●° p. |
| 17 | 31.4 | 24.4 | 97 | 75 | 6 | ------ | 3.8 | ●° a. p p. |
| 18 | 32.8 | 23.6 | 95 | 97 | 9 | 10 | 84.6 | ⍦ ● a. ●² p. |
| 19 | 32.2 | 23.6 | 90 | 75 | 6 | 8 | 3 6 | ◌° a. ◌ p p. |
| 20 | 31.2 | 24.6 | 90 | 72 | 8 | 6 | 1 | ◌ a. ●° p. |
| 21 | 31 | 25.3 | 87 | 75 | 10 | 6 | 3.8 | ●° a. ● p. |
| 22 | 31 | 25.4 | 91 | 75 | 7 | 7 | 13 | ☇ p² p |
| 23 | 30.6 | 24 | 94 | 77 | 10 | 6 | 3.3 | p a. ☇ ● p. |
| 24 | 32.8 | 24.8 | 92 | 69 | 2 | 4 | ------ | ○ p. |
| 25 | 31.8 | 24.5 | 90 | 64 | 4 | 2 | ------ | Ω a. |
| 26 | 31.5 | 24.6 | 93 | ------ | 4 | 5 | 2.5 | Ω d° ●° a. |
| 27 | 31.7 | 24.6 | 93 | 73 | 5 | 6 | ------ | Ω a. ○ p. |
| 28 | 30.7 | 24.8 | 92 | 75 | 2 | 2 | .8 | Ω a. d° ⌒° ●° p. |
| 29 | 30.4 | 25 | 95 | 79 | 1 | 4 | ------ | ⍦° p. |
| 30 | 31.1 | 25.4 | 88 | 74 | 2 | 5 | .8 | Ω a. ●° ⍦ p. |
| 31 | 31.4 | 24.6 | 97 | 74 | 5 | 8 | 3.6 | ○ a. ● ⍦ p. |
| Mean | 31.3 | 24.5 | 93.7 | 78.4 | 6 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 296.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SURIGAO.

$[\phi=9^{\circ}\ 48'\ \mathrm{N};\ \lambda=125^{\circ}\ 29'\ \mathrm{E}]$

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.6 | 23.5 | 94 | 60 | 6 | 4 | ------ | Ω a. |
| 2 | 33.1 | 23.6 | 94 | 71 | 3 | 6 | 0.6 | Ω a. |
| 3 | 33 | 23.7 | 96 | 78 | 9 | 10 | .3 | d² a. d° ⍦ p. |
| 4 | 31.7 | 22.8 | 94 | 71 | 2 | 7 | 2.4 | Ω² a. ● ⌒° p. |
| 5 | 31.5 | 22.8 | 93 | 61 | 2 | 6 | ------ | Ω a. ϟ° d° p. |
| 6 | 30.8 | 23.2 | 96 | 69 | 6 | 5 | ------ | Ω° a. |
| 7 | 32.7 | 23.1 | 96 | 70 | 3 | 4 | 1.5 | Ω a. d° ϟ° ●° p. |
| 8 | 31.3 | 22.9 | 96 | 75 | 7 | 4 | 1.3 | ⌒ d° p. |
| 9 | 30.8 | 23.5 | 96 | 79 | 7 | 9 | .5 | ● a. d° a. p. ϟ° p. |
| 10 | 29.2 | 24.2 | 96 | 79 | 8 | 10 | 10.7 | ●° d° ◌° a. ϟ° p. |
| 11 | 27.3 | 23.2 | 97 | 90 | 10 | 10 | 2.5 | ≡ a. ● d° a. p. |
| 12 | 29.5 | 22.7 | 97 | 75 | 9 | 9 | ------ | ≡ a. ϟ° p. |
| 13 | 30.8 | 22.9 | 96 | 69 | 7 | 9 | .6 | Ω a. ◯∞ ϟ° p. |
| 14 | 29.8 | 23.6 | 92 | 90 | 8 | 10 | 2.5 | d ● a. d° ϟ° p. |
| 15 | 30.1 | 22.7 | 96 | 72 | 10 | 8 | 1.3 | d° ● a. |
| 16 | 31.5 | 23.9 | 95 | 73 | 10 | 8 | .7 | d° a. |
| 17 | 29.3 | 23.1 | 96 | 91 | 9 | 10 | 30.5 | d² [ϟ ● a. p. |
| 18 | 26.7 | 23.7 | 97 | 86 | 10 | 10 | 6.9 | ● a. d° p. |
| 19 | 29.8 | 23.5 | 95 | 83 | 5 | 9 | 64 | d a. ●² p. |
| 20 | 29.1 | 22.9 | 92 | 86 | 9 | 10 | 33.2 | ● d° a. d ● ϟ° p. |
| 21 | 28.3 | 23.2 | 97 | 88 | 10 | 10 | 9.2 | ≡ ◌° d° a. ● a. p. |
| 22 | 28.7 | 22.4 | 96 | 82 | 8 | 8 | 35.6 | ◌° p. |
| 23 | 29.6 | 22.7 | 96 | 74 | 10 | 9 | .8 | ●² d² a. |
| 24 | 29.8 | 23.3 | 93 | 73 | 8 | 7 | ------ | d a. |
| 25 | 29.6 | 23.3 | 96 | 75 | 3 | 6 | ------ | |
| 26 | 30.6 | 22.1 | 96 | 70 | 4 | 2 | ------ | Ω² a. |
| 27 | 28.8 | 23.4 | 95 | 82 | 9 | 9 | 7.6 | Ω ● a. d p. |
| 28 | 28.6 | 23.4 | 95 | 79 | 9 | 7 | 19.6 | d a. ϟ° p. |
| 29 | 29.3 | 23.3 | 97 | 90 | 7 | 9 | 15.4 | ● d a. ●° [ϟ p. |
| 30 | 28.9 | 23 | 98 | 80 | 3 | 6 | 5.6 | ● a. d° a p. |
| 31 | 29.5 | 23.5 | 96 | 86 | 8 | 8 | 2.5 | ⊤° ϟ° a. ● d a. p. |
| Mean | 30.1 | 23.2 | 95.5 | 77.6 | 7.1 | 7.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 255.8 | |

### MAASIN.

$[\phi=10^{\circ}\ 08'\ \mathrm{N};\ \lambda=124^{\circ}\ 50'\ \mathrm{E}]$

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31 | 23.7 | 92 | 78 | 10 | 7 | ------ | ⍦ ϟ p. |
| 2 | 31 | 23.6 | 90 | 81 | 10 | 10 | ------ | ⍦² p. |
| 3 | 31 | 23.4 | 95 | 79 | 10 | 10 | ------ | |
| 4 | 31.1 | 23.2 | 91 | 79 | 10 | 7 | ------ | |
| 5 | 30.9 | 23.4 | 93 | 83 | 10 | 10 | ------ | |
| 6 | 31 | 23.6 | 92 | 82 | 10 | 4 | ------ | d ϟ p. |
| 7 | 30.8 | 23.2 | 92 | 75 | 10 | 4 | ------ | ϟ ⍦ p. |
| 8 | 31.5 | 24.6 | 92 | 81 | 10 | 5 | ------ | |
| 9 | 31.5 | 23.8 | 92 | 82 | 10 | 10 | ------ | d° ⊤ a. ⊤² d p. |
| 10 | 31 | 23.7 | 95 | 85 | 10 | 10 | ------ | ⌒° ⊤° p. |
| 11 | 31.5 | 23.7 | 91 | 90 | 10 | 10 | 22.6 | ● d ⊤ p |
| 12 | 31.5 | 23.8 | 93 | 91 | 10 | 10 | 5.3 | d² ⊤² a. d ⌒² p. |
| 13 | 31.5 | 23.6 | 92 | 80 | 10 | 10 | ------ | |
| 14 | 31.5 | 23.4 | 92 | 95 | 10 | 10 | 40.7 | ● ⊤ d ⌒ p. |
| 15 | 31.6 | 23.7 | 93 | 83 | 10 | 10 | ------ | ⊤ d a. d° p. |
| 16 | 30.4 | 23.6 | 94 | 82 | 10 | 10 | ------ | |
| 17 | 30.5 | 23.1 | 89 | 88 | 10 | 10 | 65.8 | d° p a. ●² p. |
| 18 | 31 | 23 | 91 | 86 | 10 | 10 | 8.1 | d² a. d° p. |
| 19 | 29.8 | 22.2 | 93 | 83 | 10 | 10 | 56.9 | d p a. p ●² p. |
| 20 | 29.8 | 22.3 | 96 | 79 | 10 | 10 | 30.3 | d a. ● a. p. |
| 21 | 29.7 | 23 | 90 | 70 | 10 | 10 | ------ | |
| 22 | 31.3 | 23.2 | 87 | 78 | 10 | 8 | ------ | |
| 23 | 29.8 | 23.4 | 83 | 77 | 10 | 10 | ------ | |
| 24 | 30 | 22.3 | 87 | 75 | 10 | 10 | ------ | d p. |
| 25 | 30 | 22.3 | 89 | 68 | 9 | 7 | ------ | |
| 26 | 31.6 | 22.8 | 87 | 81 | 10 | 5 | ------ | |
| 27 | 30.9 | 22.7 | 86 | 84 | 10 | 5 | ------ | |
| 28 | 30.8 | 22.3 | 83 | 65 | 10 | 7 | ------ | |
| 29 | 31 | 23.3 | 83 | 71 | 9 | 9 | 5.1 | d a. p. p Φ² p. |
| 30 | 30 | 22.9 | 90 | 76 | 10 | 7 | ------ | d a. ⍦ p. |
| 31 | 30.6 | 23.6 | 90 | 86 | 10 | 8 | ------ | Φ² d p. |
| Mean | 30.8 | 23.2 | 90.4 | 80.4 | 9.9 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 234.8 | |

### SAN JOSE BUENAVISTA.

$[\phi=10^{\circ}\ 44'\ \mathrm{N};\ \lambda=121^{\circ}\ 55'\ \mathrm{E}]$

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.8 | 23 | 88 | 72 | 10 | 9 | ------ | Ω² a. |
| 2 | 31.9 | 22 | 83 | 72 | 3 | 7 | ------ | Ω² a. ◯ p. |
| 3 | 32.8 | 22.1 | 91 | 72 | 6 | 8 | ------ | Ω² a |
| 4 | 33.4 | 23 | 90 | 73 | 4 | 8 | 1.3 | ϟ ⊤ a. d [ϟ p. |
| 5 | 33.3 | 23 | 91 | 77 | 7 | 9 | ------ | ● ⊤ a. |
| 6 | 32.3 | 22.5 | 91 | 75 | 9 | 9 | 51.3 | Ω² a. ●² [ϟ p. |
| 7 | 31.8 | 22 | 92 | 72 | 5 | 6 | 12.7 | ⊤ ● p. |
| 8 | 32.3 | 22.3 | 89 | 90 | 9 | 10 | 8.4 | ● ⊤ a. p. ϟ p. |
| 9 | 31.8 | 23.4 | 92 | 86 | 10 | 9 | 2.8 | ● ⊤ ϟ p. |
| 10 | 32.4 | 22.4 | 96 | 81 | 4 | 10 | ------ | ⊤ d ϟ p. |
| 11 | 31.8 | 22 | 91 | 72 | 8 | 7 | ------ | Ω² a. |
| 12 | 33.3 | 22.6 | 87 | 70 | 3 | 2 | 1.3 | Ω² a. d ● ϟ p. |
| 13 | 32.3 | 22.6 | 90 | 74 | 9 | 10 | 10.9 | ⊤ ● ϟ p. |
| 14 | 31.3 | 23.4 | 93 | 88 | 2 | 10 | .3 | ⊤ d ● ϟ p. |
| 15 | 31.8 | 22.1 | 91 | 73 | 8 | 7 | 1.5 | ● ⊤ ϟ p. |
| 16 | 32.7 | 22.6 | 87 | 67 | 10 | 8 | 4.8 | ⊤ d° ● ϟ p. |
| 17 | 32.3 | 22.5 | 92 | 71 | 9 | 5 | .5 | ● ⊤ p. |
| 18 | 32.8 | 22.4 | 88 | 77 | 7 | 10 | ------ | ◯ p. |
| 19 | 31.8 | 23.2 | 91 | 89 | 2 | 10 | 10.2 | ● a. p. ⊤ d ϟ p. |
| 20 | 32.7 | 23.1 | 71 | 67 | 5 | 8 | ------ | d° p. |
| 21 | 33.3 | 21 | 92 | 63 | 7 | 9 | ------ | Ω² a. |
| 22 | 32.8 | 20.8 | 91 | 71 | 6 | 10 | ------ | Ω² a. |
| 23 | 31.9 | 21.4 | 90 | 68 | 8 | 5 | ------ | Ω² a. |
| 24 | 32.5 | 21 | 87 | 65 | 4 | 2 | ------ | Ω² a. |
| 25 | 32.7 | 21 | 82 | 68 | 0 | 1 | ------ | Ω² a. |
| 26 | 32.4 | 21.9 | 90 | 64 | 4 | 1 | ------ | Ω² a. |
| 27 | 33.8 | 21 | 91 | 63 | 1 | 5 | ------ | Ω² a. |
| 28 | 33.9 | 20.1 | 82 | 62 | 0 | 1 | ------ | Ω° a. |
| 29 | 32.8 | 20.9 | 86 | 63 | 0 | 7 | ------ | Ω² a. ϟ p. |
| 30 | 33.1 | 22.4 | 91 | 68 | 6 | 7 | 3 | Ω² a. ⊤ ● p. |
| 31 | 33.7 | 21.5 | 91 | 66 | 1 | 8 | ------ | d° ϟ p. |
| Mean | 32.6 | 22.1 | 88.9 | 72.2 | 5.4 | 7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 109 | |

### CUYO.

$[\phi=10^{\circ}\ 51'\ \mathrm{N};\ \lambda=121^{\circ}\ 01'\ \mathrm{E}]$

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.6 | 25 | 95 | 71 | 10 | 9 | ------ | Ω ≡° a. |
| 2 | 31.6 | 23.6 | 97 | 72 | 9 | 9 | ------ | Ω² ≡ a. |
| 3 | 31.3 | 23.2 | 95 | 73 | 9 | 7 | ------ | Ω ≡° a. ϟ p. |
| 4 | 31.4 | 26.7 | 84 | 83 | 8 | 10 | 13.7 | Ω a. d° ● ϟ p. |
| 5 | 31.2 | 23.2 | 97 | 75 | 10 | 10 | ------ | Ω ≡° ⊤ d a. ⍦ p. |
| 6 | 31.9 | 23.8 | 96 | 74 | 10 | 9 | 11.4 | Ω ≡° a. d² ● p. |
| 7 | 30.7 | 23.2 | 97 | 71 | 10 | 8 | .8 | Ω ≡ ●° a. |
| 8 | 30.9 | 23.1 | 97 | 73 | 7 | 8 | 4.8 | Ω ≡ a ●° p. |
| 9 | 31 | 24.6 | 89 | 75 | 10 | 7 | ------ | [ϟ ●° a. ϟ p. |
| 10 | 31 | 26.7 | 86 | 73 | 8 | 8 | ------ | Ω a ϟ p. |
| 11 | 31.3 | 26.1 | 89 | 71 | 8 | 9 | ------ | Ω a. ϟ p. |
| 12 | 31.4 | 25.1 | 85 | 73 | 8 | 7 | ------ | Ω a. ϟ p. |
| 13 | 29.5 | 25.2 | 92 | 82 | 9 | 9 | 14.7 | Ω a. d² [ϟ p. |
| 14 | 29.3 | 23.3 | 96 | 84 | 10 | 10 | 1 | ● ⌒ a d² ϟ p. |
| 15 | 31.5 | 23.6 | 97 | 76 | 9 | 9 | 12.7 | Ω ≡ a. ● p. |
| 16 | 31.2 | 24 | 96 | 71 | 9 | 8 | ------ | ● ≡° a. ϟ p. |
| 17 | 31.4 | 24.7 | 96 | 69 | 8 | 7 | ------ | Ω ≡° a. ϟ p. |
| 18 | 30.6 | 26.6 | 87 | 73 | 8 | 9 | ------ | Ω a |
| 19 | 30.4 | 27 | 81 | 72 | 9 | 9 | ------ | Ω d a. |
| 20 | 30.5 | 26.5 | 76 | 69 | 9 | 8 | ------ | Ω a. |
| 21 | 30.5 | 26.1 | 78 | 57 | 8 | 8 | ------ | Ω a. |
| 22 | 29.8 | 25.6 | 77 | 72 | 8 | 8 | ------ | Ω a. |
| 23 | 30.3 | 24.9 | 86 | 67 | 9 | 9 | ------ | Ω a. |
| 24 | 30.7 | 24.3 | 84 | 67 | 8 | 7 | ------ | Ω a. |
| 25 | 32.1 | 21.9 | 96 | 71 | 8 | 8 | ------ | Ω ≡° a. |
| 26 | 30.6 | 23.2 | 87 | 69 | 8 | 8 | ------ | Ω a. |
| 27 | 31.1 | 25.4 | 88 | 67 | 9 | 7 | ------ | Ω a. |
| 28 | 30.6 | 26.1 | 78 | 65 | 9 | 8 | ------ | Ω a. |
| 29 | 31.1 | 25.7 | 85 | 68 | 9 | 6 | ------ | Ω² a. |
| 30 | 31.2 | 26.6 | 87 | 73 | 8 | 9 | ------ | Ω a. |
| 31 | 31.1 | 26.6 | 84 | 71 | 9 | 7 | ------ | Ω° a. |
| Mean | 30.9 | 24.9 | 89 | 71.8 | 8.7 | 8.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 59.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### GUIUAN.

[$\phi$=11° 03′ N: $\lambda$=125° 43′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 34 | 24.3 | 90 | ------ | 5 | 6 | ------ | Ω° a. |
| 2 | 31.3 | 22.1 | 99 | 68 | 1 | 4 | 17 | Ω$^2$ a. |
| 3 | 31.2 | 23.4 | 97 | 71 | 6 | 7 | 2.3 | ● a ●° d° a. p. |
| 4 | 29.9 | 23 | 94 | 90 | 7 | 6 | 9.8 | ● a. |
| 5 | 30.6 | 22.6 | 99 | 77 | 7 | 8 | 2.9 | Ω$^2$ ●° a ↯$^2$ψ° p. |
| 6 | 31.6 | 22.1 | ------ | 70 | 2 | 1 | ------ | Ω$^2$ a. ↯° p. |
| 7 | 31.3 | 21.3 | 99 | 65 | 3 | 3 | 19.7 | Ω$^2$ a. p$^2$ p. |
| 8 | 3 .8 | 21.9 | 99 | 74 | 5 | 4 | 9.9 | ● p a. ↯° p. |
| 9 | 30.9 | 23.9 | 91 | 71 | 8 | 8 | 14.2 | ● a. |
| 10 | 30.7 | 23.9 | 97 | 79 | 9 | 9 | 8.4 | ●° a. p. |
| 11 | 29.6 | 23.1 | 96 | 88 | 9 | 10 | 31.3 | ● p$^2$ p. |
| 12 | 31.4 | 22.9 | 98 | 66 | 7 | 4 | 1.3 | ●° a. ↯° p. |
| 13 | 30.9 | 22.8 | 89? | 80 | 8 | 7 | 6 | Ω° ●° a. ↯ p. |
| 14 | 30.4 | 23.2 | 98 | 74 | 8 | 8 | ------ | ● a. ↯ p. |
| 15 | 31 | 21.8 | 99 | 72 | 7 | 7 | ------ | ↯° p. |
| 16 | 31.1 | 22.8 | 97 | 71 | 4 | 4 | 2.6 | Ω° a. |
| 17 | 30.7 | 23.8 | 93 | 97 | 7 | 10 | 33.5 | ● a p. ⊤° ↯ p. |
| 18 | 26.4 | 23.7 | 95 | 99 | 10 | 10 | 46.4 | d$^2$ ⊤ a. ● a p. |
| 19 | 30.2 | 22.6 | 89 | 79 | 8 | 8 | 22.6 | ●d°a. ● ⊤° ↯° p. |
| 20 | 30.4 | 22.3 | 85 | 73 | 8 | 7 | .5 | d$^2$ a. |
| 21 | 30.8 | 24.6 | 91 | 69 | 9 | 8 | .8 | ↯° p. |
| 22 | 29.9 | 22.6 | 97 | 80 | 9 | 8 | 4.6 | ●° a. |
| 23 | 30.5 | 23.2 | 90 | 81 | 4 | 3 | 1.8 | d° ●° p. |
| 24 | 30.4 | 21.5 | 99 | 70 | 4 | 5 | 5.8 |  |
| 25 | 30.2 | 22.8 | 99 | 76 | 7 | 1 | ------ | ● a. |
| 26 | 30.4 | 21.1 | 99 | 78 | 6 | 3 | 6.6 | p p. |
| 27 | 30.1 | 23.9 | 86 | 68 | 4 | 1 | ------ | ● a. |
| 28 | 30.3 | 21.2 | 98 | 73 | 1 | 1 | ------ | Ω$^2$ a. ↯$^2$ p. |
| 29 | 30.4 | 22.9 | 89 | 73 | 1 | 3 | 3.8 | Ω° a d p. |
| 30 | 30.6 | 23 | 96 | 76 | 9 | 2 | 4.6 | ●° a p. d° ⌒$^2$ p. |
| 31 | 30.4 | 23.7 | 93 | 78 | 9 | 7 | ------ | ↯$^2$ ψ$^2$ p. |
| Mean | 30.6 | 22.8 | 94.7 | 76.2 | 6.2 | 5.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 259.4 |  |

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.5 | 21.7 | 98 | 74 | 3 | 7 | ------ | Ω a. ◯ ⊤ ψ° p. |
| 2 | 31.3 | 22.3 | 97 | 67 | 2 | 5 | 27.7 | Ω ≡ a ⊕° p. |
| 3 | 30.9 | 23.2 | 97 | 75 | 7 | 6 | 3.3 | ●$^2$ a. ● ↯ p. |
| 4 | 30.6 | 22.5 | 97 | 75 | 3 | 6 | ------ | Ω ≡ a. ↯ ⊕° p. |
| 5 | 30.9 | 23 | 96 | 70 | 7 | 6 | 2 | Ω a ●° ⊤ ↯ ψ° p. |
| 6 | 30.9 | 22.2 | 97 | 66 | 3 | 4 | .3 | Ω ≡ a. ●° ↯ p. |
| 7 | 30.8 | 22.3 | 97 | 62 | 5 | 4 | 27.7 | Ω ≡ a. |
| 8 | 30.7 | 22.7 | 97 | 70 | 6 | 5 | .3 | ● ≡ a. ⊤ ↯ p. |
| 9 | 32.3 | 23.5 | 96 | 61 | 7 | 6 | 14 | ⌒ a. ●° a p. ↯ p. |
| 10 | 30.5 | 24 | 96 | 72 | 9 | 8 | 20.1 | ● a. ●° ↯ p. |
| 11 | 30.5 | 23.4 | 97 | 73 | 8 | 7 | 2.8 | ● a. p ↯ p. |
| 12 | 31 | 23.1 | 97 | 70 | 4 | 6 | .8 | ≡ a. ↯ ●° p. |
| 13 | 30.7 | 22.7 | 97 | 72 | 4 | 4 | 1.8 | ≡ a ↯ p. |
| 14 | 30.6 | 24 | 96 | 65 | 10 | 5 | .8 | ●° a. ↯ p. |
| 15 | 30.7 | 21.6 | 96 | 67 | 3 | 4 | ------ | Ω ≡° a ↯° p. |
| 16 | 30.9 | 22.4 | 97 | 70 | 4 | 4 | 1.5 | Ω ≡ a. ●° ↯ p |
| 17 | 31.3 | 22.4 | 97 | 76 | 4 | 7 | 83.6 | ≡ a. ●° ↯ p. |
| 18 | 24.4 | 22.5 | 98 | 97 | 10 | 10 | 153.1 | ⊏ a ●$^2$ ⊤ a. p. |
| 19 | 29 | 22 | 96 | 80 | 9 | 8 | 32.3 | ⌒ ● a. ↯ p. |
| 20 | 29.3 | 23.2 | 97 | 75 | 10 | 8 | 9.6 | ● a ↯ p. |
| 21 | 30.3 | 22.5 | 95 | 65 | 4 | 5 | ------ | ●° ≡° a. ↯ p. |
| 22 | 29 | 23 | 97 | 79 | 8 | 7 | .5 | d a ●° a. p. ⊕° p |
| 23 | 30 | 21 | 95 | 67 | 4 | 4 | 2 | Ω ≡° a. d ●° p. |
| 24 | 30.2 | 21.2 | 96 | 69 | 3 | 5 | ------ | Ω° ≡° a. |
| 25 | 30 | 22 | 97 | 65 | 5 | 4 | ------ | Ω ≡ a. |
| 26 | 30.5 | 20.7 | 98 | 69 | 3 | 5 | 6.9 | Ω ≡ d a. ↯ ● p. |
| 27 | 29.8 | 21.7 | 96 | 62 | 4 | 4 | ------ | ≡° a. |
| 28 | 30 | 20.4 | 96 | 74 | 1 | 4 | ------ | Ω ≡° a. ⌒ p. |
| 29 | 29.8 | 20.5 | 92 | 95 | 5 | 7 | 24.3 | ● a. p. ⊤ p. |
| 30 | 30.8 | 23.3 | 97 | 67 | 7 | 6 | 19.6 | ≡ a. ● p |
| 31 | 30.3 | 23.1 | 97 | 74 | 5 | 5 | 1.8 | ≡ a. ●° a. p. |
| Mean | 30.3 | 22.4 | 96.5 | 71.7 | 5.4 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 436.8 |  |

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32 | 25 | 97 | 78 | 10 | 9 | ------ |  |
| 2 | 33 | 24 | 100 | 72 | 9 | 9 | ------ |  |
| 3 | 32.8 | 24.5 | 98 | 75 | 9 | 7 | ------ |  |
| 4 | 32.8 | 24.6 | 98 | 66 | 7 | 3 | ------ |  |
| 5 | 33 | 25.2 | 97 | 79 | 8 | 7 | ------ |  |
| 6 | 32.5 | 25 | 98 | 74 | 9 | 7 | ------ |  |
| 7 | 32.5 | 24.8 | 99 | 74 | 6 | 5 | ------ |  |
| 8 | ------ | 24.6 | 98 | ------ | 3 | ------ | ------ |  |
| 9 | 29.2 | 24.5 | 93 | 91 | 9 | 10 | ------ |  |
| 10 | 28.4 | 26.4 | 94 | 86 | 10 | 10 | 4 |  |
| 11 | 31.2 | 24.5 | 95 | 80 | 8 | 9 | ------ |  |
| 12 | 31.4 | 25 | 98 | 77 | 7 | 8 | 19.6 |  |
| 13 | 30.5 | 24.5 | 100 | 86 | 10 | 9 | ------ |  |
| 14 | 31 | 25.4 | 89 | 85 | 7 | 4 | ------ |  |
| 15 | 31.5 | 24.8 | 98 | 80 | 10 | 8 | ------ |  |
| 16 | 31.5 | 24.5 | 98 | 79 | 9 | 8 | ------ |  |
| 17 | 32.5 | 24.6 | 97 | 76 | 8 | 6 | 1.5 |  |
| 18 | 29.8 | 24.8 | 99 | 92 | 10 | 10 | 2.8 |  |
| 19 | 31 | 24.2 | 94 | 78 | 10 | 8 | 1 |  |
| 20 | 31.4 | 25 | 89 | 69 | 8 | 6 | ------ |  |
| 21 | 31.8 | 25.2 | 87 | 70 | 8 | 9 | ------ |  |
| 22 | 29.5 | 25 | 92 | 85 | 9 | 4 | ------ |  |
| 23 | 30.8 | 22.8 | 100 | 78 | 7 | 8 | ------ |  |
| 24 | 31.2 | 22.6 | 98 | 78 | 8 | 7 | ------ |  |
| 25 | 31 | 23.8 | 100 | 79 | 8 | 4 | ------ |  |
| 26 | 30.5 | 23.4 | 100 | 82 | 8 | 7 | ------ |  |
| 27 | 30.6 | 23 | 88 | 76 | 8 | 8 | ------ |  |
| 28 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 29 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 30 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 31 | ------ | ------ | ------ | ------ | ------ | ------ | 16.5? |  |
| Mean | 31.3 | 24.5 | 96.1 | 78.7 | 8.3 | 7.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 45.4[1] |  |

### ROMBLON.

[$\phi$=12° 35′ N; $\lambda$=122° 16′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 33.7 | 24 | 89 | 64 | 7 | 7 | ------ | ⊕ ψ p. |
| 2 | 33 | 22.8 | 97 | 67 | 8 | 4 | ------ | Ω a ↯ p. |
| 3 | 33.4 | 22.8 | 97 | 63 | 8 | 4 | 4.8 | Ω$^2$ a. |
| 4 | 31.7 | 23.7 | 98 | 75 | 8 | 7 | ------ | ● a. |
| 5 | 32.6 | 22.8 | 96 | 70 | 9 | 6 | ------ | ⊏ a. |
| 6 | 30.4 | 22.6 | 96 | 82 | 8 | 9 | 24.4 | ● a. |
| 7 | 33.1 | 22.7 | 96 | 67 | 8 | 4 | 1.1 | ● a. ●° p. |
| 8 | 32.5 | 23.5 | 95 | 69 | 8 | 7 | ------ |  |
| 9 | 32 | 24.1 | 89 | 75 | 7 | 8 | .3 | Ω a. d p. |
| 10 | 33.5 | 24.2 | 90 | 70 | 8 | 9 | ------ | ⊏ p. |
| 11 | 3.3 | 23.8 | 94 | 66 | 7 | 4 | ------ | Ω° a. ↯ p. |
| 12 | 32.9 | 23.9 | 94 | 68 | 8 | 5 | 2.3 | Ω a ● ⊏ p. |
| 13 | 32.3 | 25 | 90 | 75 | 9 | 9 | ------ |  |
| 14 | 33.2 | 25.1 | 88 | 66 | 9 | 4 | ------ | ↯ p. |
| 15 | 33.3 | 23.2 | 97 | 67 | 9 | 8 | 1 | ↯ p |
| 16 | 33.5 | 22.4 | 89 | 85 | 8 | 9 | 7.1 | ●° a. p. |
| 17 | 33.3 | 23.7 | 97 | 66 | 9 | 4 | .3 | ● a. ⊏ a. p. |
| 18 | 33.7 | 24.1 | 90 | 66 | 9 | 8 | 11.2 | d a. p. ⊤ ● p. |
| 19 | 33.5 | 24.4 | 85 | 62 | 9 | 4 | .5 | ●° a. |
| 20 | 33 | 24.1 | 88 | 58 | 10 | 3 | ------ | d a. |
| 21 | 32.8 | 23.8 | 80 | 59 | 4 | 3 | ------ |  |
| 22 | 32 | 22.3 | 86 | 65 | 7 | 7 | ------ | Ω a. |
| 23 | 32.2 | 21 | 96 | 60 | 6 | 3 | 6.1 | Ω a. ● p. |
| 24 | 31 | 22 | 96 | 77 | 6 | 8 | .8 | ● p. |
| 25 | 32.4 | 23.1 | 89 | 65 | 5 | 6 | ------ | Ω a |
| 26 | 32.2 | 21.9 | 96 | 61 | 7 | 6 | .8 | Ω a. p p. |
| 27 | 32.3 | 22.3 | 87 | 63 | 8 | 3 | ------ | ⊕ ψ p. |
| 28 | 31.3 | 21.7 | 96 | 74 | 7 | 9 | ------ | Ω a. |
| 29 | 33.6 | 22.8 | 92 | 59 | 6 | 3 | 115.6 | ●$^2$ ⊏$^2$ p. |
| 30 | 32.5 | 22.8 | 92 | 72 | 9 | 4 | ------ | ●$^2$ ⊏$^2$ a. ↯ p. |
| 31 | 32.8 | 24.7 | 87 | 71 | 7 | 7 | ------ |  |
| Mean | 32.7 | 23.3 | 92 | 68 | 7.7 | 5.9 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 176.3 |  |

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[1] 28 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 34 | 23.3 | 97 | 64 | 7 | 4 | ------ | Ω² a. Φ p. |
| 2 | 34.9 | 23.4 | 99 | 64 | 8 | 5 | ------ | Ω² a |
| 3 | 33.7 | 23.1 | 99 | 66 | 9 | 6 | 1.3 | d a. p a. p. |
| 4 | 32.8 | 23.1 | 99 | 74 | 4 | 3 | 3.8 | ●° a. ⊤ ζ p. |
| 5 | 32.6 | 22.6 | 98 | 70 | 2 | 4 | ------ | Ω a. ⊤ ζ Ψ Φ p. |
| 6 | 34 | 23.1 | 9[illegible] | 68 | 4 | 2 | 14.7 | Ω a. ζ p. |
| 7 | 33.2 | 22.7 | 98 | 73 | 4 | 4 | 2.8 | ● d a. ⌒ p ζ p. |
| 8 | 32.2 | 23.7 | 98 | 71 | 5 | 5 | 68.9 | p a ● p. |
| 9 | 32.3 | 22.8 | 98 | 83 | 9 | 9 | 20.4 | ⌈ζ ●² a ● a.p. |
| 10 | 28.9 | 24.4 | 93 | 81 | 8 | 8 | 2.1 | ● ⌒ p a. d p p. |
| 11 | 31.6 | 23.9 | 97 | 71 | 6 | 8 | 1 | ●° a. d p p. |
| 12 | 32.2 | 23.1 | 99 | 83 | 6 | 7 | .5 | ●° d ζ p p. |
| 13 | 32.3 | 23.6 | 98 | 71 | 7 | 5 | .2 | d ζ p p. |
| 14 | 32.6 | 23.6 | 95 | 70 | 4 | 3 | ------ | ζ p. |
| 15 | 32.7 | 22.7 | 99 | 69 | 9 | 6 | .2 | Ω a. d p p. |
| 16 | 32.5 | 23.2 | 99 | 71 | 8 | 5 | ------ | ζ p. |
| 17 | 32.4 | 22.4 | 98 | 73 | 7 | 5 | 36.1 | Ω² a. ●² ζ p. |
| 18 | 32.8 | 23.8 | 90 | 87 | 10 | 9 | 75.7 | ● a. ●² ⊤ p. |
| 19 | 29.1? | 22.9 | 95 | 77 | 9 | 7 | 22.9 | ⌒° a. ●a p. ζ p. |
| 20 | 30.9 | 24 | 87 | 80 | 7 | 9 | ------ | d a. |
| 21 | 30.8 | 25 | 88 | 81 | 8 | 8 | .8 | Ω a. d p. |
| 22 | 31.4 | 24.4 | 97 | 75 | 7 | 6 | ------ | ●° d a. |
| 23 | 30.8 | 21.5 | 99 | 69 | 8 | 4 | ------ | Ω² a. |
| 24 | 32.4 | 21.2 | 100 | 80 | 7 | 6 | ------ | Ω² a. |
| 25 | 31.4 | 21.3 | 100 | 74 | 7 | 3 | ------ | Ω a. |
| 26 | 31.8 | 21.7 | 99 | 80 | 6 | 5 | 4.1 | Ω a. ●° a. p. |
| 27 | 30.8 | 21.3 | 99 | 76 | 3 | 4 | ------ | |
| 28 | 30.7 | 21.6 | 100 | 67 | 2 | 1 | 2.8 | Ω a. ζ p. |
| 29 | 32 | 22 | 99 | 80 | 5 | 7 | 20.8 | ●°⌒° a. Ψ ζ ●p. |
| 30 | 31.3 | 23.1 | 99 | 75 | 5 | 8 | .3 | p p. |
| 31 | 31.4 | 25.1 | 93 | 79 | 9 | 8 | 39.3 | p ●° a. ⊤ ●° ζ p. |
| Mean | 32 | 23 | 97 | 74.3 | 6.5 | 5.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 318.7 | |

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.4 | 22 | 96 | 68 | 7 | 7 | ------ | |
| 2 | 31.6 | 22.6 | 92 | 78 | 7 | 8 | ------ | |
| 3 | 32 | 23 | 92 | 91 | 7 | 8 | 13.5 | d a. p. ●° p. |
| 4 | 30.5 | 23.2 | 95 | 84 | 9 | 7 | ------ | ●° a. |
| 5 | 31.7 | 22.5 | 96 | 75 | 7 | 9 | ------ | d a. ⊤ p. |
| 6 | 30.5 | 23 | 93 | 70 | 9 | 9 | ------ | ⊤ p. |
| 7 | 30.6 | 22.7 | 97 | 71 | 7 | 7 | 6.1 | ●° a. |
| 8 | 31.7 | 23.6 | 94 | 85 | 8 | 9 | 1.3 | d p. |
| 9 | 28.9 | 24 | 96 | 86 | 7 | 8 | 2.5 | d a. ⊤ p. |
| 10 | 29.9 | 25 | 96 | 85 | 7 | 7 | 21.6 | ● a. ●° p. |
| 11 | 31 | 23.3 | 99 | 81 | 7 | 7 | ------ | ●° a. |
| 12 | 31.1 | 23 | 97 | 76 | 9 | 10 | 18.3 | ● p. |
| 13 | 29.5 | 26 | 92 | 94 | 8 | 9 | 6.1 | ●° a. p. |
| 14 | 30.8 | 22.7 | 98 | 74 | 8 | 8 | ------ | |
| 15 | 30.5 | 22 | 98 | 72 | 7 | 8 | ------ | |
| 16 | 30.8 | 23.5 | 97 | 78 | 7 | 8 | ------ | |
| 17 | 31.2 | 21.8 | 97 | 78 | 7 | 8 | 2.5 | ●° p. |
| 18 | 29.8 | 25.8 | 94 | 78 | 8 | 8 | 58.2 | d° a. ● p. |
| 19 | 30.2 | 23.5 | 91 | 78 | 7 | 10 | ------ | ● a. |
| 20 | 31.2 | 25 | 84 | 72 | 9 | 8 | ------ | |
| 21 | 31.3 | 22 | 91 | 81 | 7 | 10 | ------ | |
| 22 | 28.7 | 23.9 | 93 | 93 | 9 | 8 | ------ | |
| 23 | 30.4 | 20.1 | 97 | 74 | 9 | 7 | ------ | |
| 24 | 30.5 | 20.3 | 96 | 72 | 9 | 7 | ------ | |
| 25 | 30.7 | 22 | 91 | 72 | 6 | 8 | ------ | |
| 26 | 32.4 | 21.5 | 96 | 79 | 10 | 8 | ------ | |
| 27 | 31.2 | 22.2 | 93 | 69 | 7 | 7 | ------ | |
| 28 | 31.1 | 22 | 96 | 68 | 9 | 7 | ------ | |
| 29 | 31.5 | 22.7 | 97 | 89 | 9 | 7 | 4.3 | ⊤ ζ d p. |
| 30 | 31.3 | 24.9 | 94 | 76 | 9 | 7 | ------ | d a. |
| 31 | 31.8 | 23.8 | 96 | 70 | 9 | 10 | 42.2 | d° a. ● p. |
| Mean | 30.9 | 23 | 94.6 | 78 | 7.9 | 8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 176.6 | |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29 | 23.4 | 84 | 81 | 10 | 10 | 43.1 | |
| 2 | 29 | 24 | 88 | 95 | 10 | 10 | 27.9 | |
| 3 | 28.6 | 23.6 | 92 | 84 | 10 | 10 | 6.4 | |
| 4 | 28.6 | 23 | 92 | 77 | 10 | 10 | 9.4 | |
| 5 | ------ | 23 | 89 | 69 | 10 | 10 | 3 | |
| 6 | 30 | 24.6 | 85 | 68 | 10 | 7 | ------ | |
| 7 | 29.6 | 24 | 84 | 77 | 10 | 10 | 5.1 | |
| 8 | 30 | 24 | 84 | 67 | 7 | 8 | ------ | |
| 9 | 28.8 | 24 | 84 | 77 | 10 | 10 | 11.4 | |
| 10 | 29.4 | 23.8 | 90 | 73 | 10 | 7 | 53.3 | |
| 11 | 28 | 23.4 | 92 | 87 | 10 | 10 | 21.6 | |
| 12 | 26.8 | 23.8 | 92 | 84 | 10 | 10 | 6.3 | |
| 13 | 31.4 | 25 | 84 | 65 | 10 | 7 | ------ | |
| 14 | 29 | 24.2 | 89 | 77 | 10 | 10 | 10.2 | |
| 15 | 30.6 | 24 | 86 | 71 | 8 | 10 | ------ | |
| 16 | 31 | 24 | 89 | 69 | 10 | 7 | 8.9 | |
| 17 | 29.6 | 25 | 89 | 71 | 10 | 8 | --- | |
| 18 | 29.4 | 23.8 | 90 | 73 | 10 | 8 | 20.3 | |
| 19 | 26.8 | 24.6 | 92 | 90 | 10 | 10 | 78.7 | |
| 20 | 28.8 | 22.8 | 95 | 77 | 10 | 10 | 58.4 | |
| 21 | 30.6 | 24.4 | 87 | 69 | 10 | 10 | 2.5 | |
| 22 | 29.6 | 25 | 84 | 75 | 10 | 10 | 17.7 | |
| 23 | 30 | 24.8 | 90 | 71 | 8 | 10 | 3.8 | |
| 24 | 29.2 | 23.6 | 92 | 77 | 10 | 10 | ------ | |
| 25 | 29.6 | 24 | 84 | 71 | 10 | 10 | 1.3 | |
| 26 | 30.4 | 23.6 | 84 | 67 | 10 | 6 | ------ | |
| 27 | 28.4 | 23.4 | 84 | 89 | 6 | 10 | 8.9 | |
| 28 | 29.4 | 24.8 | 84 | 71 | 10 | 7 | ------ | |
| 29 | 29.2 | 25 | 84 | 71 | 8 | 10 | ------ | |
| 30 | 29.4 | 25 | 84 | 72 | 10 | 10 | ------ | |
| 31 | 28.2 | 26 | 84 | 80 | 10 | 10 | 53.3 | |
| Mean | 29.3 | 24.1 | 87.5 | 75.6 | 9.6 | 9.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 451.5 | |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.8 | 22.2 | 94 | 64 | 10 | 10 | ------ | Ψ Φ p. |
| 2 | 32.8 | 22.2 | 93 | 74 | 10 | 9 | ------ | |
| 3 | 33.5 | 21.5 | 90 | 62 | 8 | 5 | ------ | |
| 4 | 32.4 | 23.1 | 92 | 56 | 3 | 3 | ------ | ●° a. |
| 5 | 33.5 | 22 | 90 | 71 | 5 | 10 | ------ | ⊤ Ψ Φ p. |
| 6 | 32.9 | 23.4 | 94 | 68 | 7 | 8 | ------ | ⊤ Ψ Φ p. |
| 7 | 32.9 | 22.2 | 90 | 60 | 10 | 9 | ------ | Ψ ▽ d° p. |
| 8 | 32.5 | 23 | 97 | 64 | 9 | 4 | ------ | |
| 9 | 32 | 23 | 87 | 75 | 10 | 10 | 11.7 | d° a. ● a p. ⊤ p. |
| 10 | 32.2 | 24.5 | 97 | 68 | 10 | 9 | 7.6 | ● ⊤ a. p p. |
| 11 | 33.1 | 23.5 | 95 | 68 | 10 | 10 | .5 | p a. |
| 12 | 33.7 | 23.1 | 94 | 56 | 10 | 8 | 1 | ●° p. |
| 13 | 30.3 | 24 | 96 | 72 | 10 | 10 | 1.8 | p° p. |
| 14 | 33.6 | 23.5 | 96 | 60 | 7 | 5 | 18 | ● p. |
| 15 | 32.5 | 23.8 | 97 | 75 | 10 | 10 | 39.1 | ⊤ ●² p. |
| 16 | 31.8 | 23.1 | 97 | 79 | 10 | 10 | 1.5 | d a. p. ⊤ p. |
| 17 | 31.2 | 22 | 95 | 75 | 10 | 8 | 1 | ●° p. |
| 18 | 31 | 24.5 | 89 | 76 | 10 | 10 | 12.7 | ● p. |
| 19 | 32.5 | 23.2 | ------ | 76 | 10 | 10 | 7.4 | p p. |
| 20 | 31.3 | 23.6 | 91 | 63 | 10 | 10 | 6.4 | |
| 21 | 30.1 | 22.9 | 93 | 77 | 10 | 10 | 3.3 | p a. |
| 22 | 31 | 21.5 | 88 | 69 | 10 | 7 | 2 | ●° p. |
| 23 | 30.5 | 21.2 | 90 | 70 | 10 | 10 | ------ | |
| 24 | 30.9 | 21.6 | 94 | 65 | 4 | 8 | 6.9 | |
| 25 | 30.5 | 22.9 | 96 | 70 | 10 | 7 | ------ | p a. |
| 26 | 31.6 | 22 | 93 | 60 | 10 | 8 | 2.5 | |
| 27 | 31.7 | 22.5 | 94 | 64 | 10 | 4 | ------ | p ⌒ a. |
| 28 | 32.5 | 21.2 | 91 | 58 | 4 | 7 | 2.3 | |
| 29 | 30.5 | 23.7 | 96 | 76 | 10 | 9 | 13.2 | d ● a. |
| 30 | 31.1 | 23.9 | 88 | 73 | 10 | 9 | 7.1 | |
| 31 | 32.4 | 23.5 | 96 | 72 | 10 | 10 | .3 | ● a. ●° p. |
| Mean | 32 | 22.8 | 93.1 | 68.3 | 8.9 | 8.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 146.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 32 | 22.5 | 97 | 72 | 10 | 5 | ------ | Ω ≡ a. |
| 2 | 33 | 23.5 | 97 | 72 | 10 | 9 | 0.4 | p° a. ⊤ a. p. |
| 3 | 32.8 | 22 | 98 | 74 | 3 | 9 | ------ | Ω² ≡ a. p° ⊕ p. |
| 4 | 33.3 | 22.8 | 96 | 70 | 6 | 6 | ------ | Ω a ⚡ p. |
| 5 | 33.5 | 22.2 | 97 | 66 | 3 | 9 | ------ | Ω a. ⊤ p° ∪ p. |
| 6 | 33.4 | 22.2 | 97 | 66 | 10 | 7 | .5 | d° a. |
| 7 | 33.3 | 21.2 | 95 | 67 | 4 | 7 | .3 | Ω d° a. |
| 8 | 34 | 21.4 | 96 | 88 | 3 | 10 | 2.2 | Ω² a. ●° d° p. |
| 9 | 30 | 23.4 | 95 | 78 | 10 | 10 | 1.2 | ⊤ d° a. |
| 10 | 33.4 | 22.5 | 92 | 85 | 9 | 9 | 4.3 | ⌒ ⊤ a. d° a. p. |
| 11 | 34 | 22 | 96 | 70 | 3 | 9 | ------ | p° p. |
| 12 | 30 | 22.2 | 97 | 81 | 9 | 10 | 4.8 | d° ⊤ a. p° ⌒ ⚡ p. |
| 13 | 31.5 | 24 | 96 | 79 | 9 | 10 | 5.5 | ⌒² a. ●° d° a. p. |
| 14 | 32.5 | 22.4 | 96 | 72 | 10 | 7 | .1 | d° a. p. |
| 15 | 32.3 | 20.6 | 97 | 68 | 10 | 10 | .1 | Ω² ≡ a. p° p. |
| 16 | 32.6 | 22 | 97 | 66 | 8 | 8 | .4 | Ω ≡ d a. d° p. |
| 17 | 33.2 | 21.5 | 97 | 83 | 5 | 8 | 39.6 | p° ⌒ a. d° ⊤ ● p. |
| 18 | 32 | 23.4 | 82 | 59 | 9 | 9 | .2 | ● p° a. d° p. |
| 19 | 32.3 | 22.6 | 73 | 71 | 6 | 9 | ------ | p° a. p. |
| 20 | 32.5 | 22.4 | 82 | 58 | 4 | 7 | ------ |  |
| 21 | 32.8 | 21.4 | 91 | 58 | 4 | 9 | 5.3 | Ω° a. d° ●° p. |
| 22 | 30.5 | 22 | 76 | 61 | 8 | 9 | .1 | p° a. |
| 23 | 32 | 20.8 | 95 | 73 | 9 | 9 | 2 | Ω² a. d p. |
| 24 | 31.6 | 20.1 | 96 | 59 | 7 | 9 | ------ | Ω² p° a. |
| 25 | 30.7 | 20.5 | 95 | 70 | 6 | 9 | ------ | Ω² a. |
| 26 | 32.8 | 20 | 95 | 70 | 4 | 10 | ------ | Ω a. p° p. |
| 27 | 32.7 | 20.5 | 94 | 54 | 4 | 7 | ------ | Ω° a. |
| 28 | 32 | 21.3 | 97 | 66 | 4 | 9 | ------ | Ω p° a. |
| 29 | 33.2 | 22 | 94 | 67 | 6 | 8 | ------ | Ω° p° a. ⚡ p. |
| 30 | 33.8 | 22.2 | 95 | 65 | 5 | 9 | ------ | Ω° a. p° p. |
| 31 | 33.5 | 21.4 | 95 | 64 | 5 | 9 | 7.6 | ⌒ ⚡ ⊤° ⊕° ● p. |
| Mean | 32.5 | 21.9 | 93.4 | 69.4 | 6.5 | 8.5 | ------ |  |
| Total | ----- | ------ | ------ | ------ | ------ | ------ | 74.6 |  |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 33.1 | 22.7 | 92 | 59 | 9 | 8 | ------ |  |
| 2 | ------ | 21.2 | 96 | 60 | 9 | 8 | ------ |  |
| 3 | 32.3 | 20.5 | 96 | 66 | 5 | 8 | ------ |  |
| 4 | 33.6 | 21.6 | 97 | 66 | 4 | 8 | ------ | ⊤° p. |
| 5 | 34.4 | 22.2 | 98 | 64 | 5 | 8 | 2.5 | ⊤° ●° p. |
| 6 | 34 | 21 | 99 | 51 | 8 | 9 | 27.7 | ⊤° ● p. |
| 7 | 33 | 20.5 | 98 | 66 | 10 | 8 | ------ | Ω ≡° a. |
| 8 | 32.2 | 19.7 | 99 | 63 | 3 | 8 | ------ | ⊤° p. |
| 9 | 30.2 | 22.3 | 96 | 81 | 8 | 9 | .3 | d p. |
| 10 | 32.5 | 22 | 94 | 77 | 8 | 9 | ------ | d p. |
| 11 | 32 | 21.2 | 97 | 69 | 4 | 8 | ------ |  |
| 12 | 32.3 | 20.6 | 98 | 74 | 6 | 9 | 10.2 | ⊤° ●° p. |
| 13 | 30.7 | 23 | 97 | 79 | 9 | 9 | .3 | d p. |
| 14 | 31.8 | 21.2 | 98 | 65 | 4 | 6 | ------ |  |
| 15 | 33 | 19.4 | 96 | 66 | 8 | 8 | ------ |  |
| 16 | 31.9 | 22.2 | 97 | 70 | 9 | 8 | ------ |  |
| 17 | 33.2 | 20.3 | 98 | 68 | 5 | 8 | ------ |  |
| 18 | 32.3 | 22.6 | 97 | 64 | 9 | 8 | 3.6 | ●° p. |
| 19 | 32 | 22.8 | 90 | 65 | 6 | 8 | ------ |  |
| 20 | 31.8 | 22.2 | 88 | 63 | 4 | 8 | ------ | ⌒ p. |
| 21 | 31.4 | 22 | 88 | 62 | 7 | 8 | ------ |  |
| 22 | 31 | 21.5 | 93 | 63 | 7 | 8 | ------ |  |
| 23 | 31.9 | 17.9 | 96 | 63 | 9 | 8 | ------ |  |
| 24 | 30.6 | 17 | 96 | 63 | 9 | 9 | ------ |  |
| 25 | 31.4 | 17.8 | 98 | 65 | 7 | 8 | ------ |  |
| 26 | 31.9 | 17 | 96 | 62 | 5 | 8 | ------ |  |
| 27 | 31.9 | 17.4 | 96 | 57 | 6 | 8 | ------ |  |
| 28 | 32 | 18.6 | 96 | 62 | 9 | 9 | ------ |  |
| 29 | 31.8 | 20.5 | 98 | 69 | 10 | 8 | .5 | ≡° a. d p. |
| 30 | 32 | 20.5 | 98 | 71 | 8 | 8 | ------ | ≡° a. |
| 31 | 32.2 | 20.7 | 96 | 62 | 4 | 9 | ------ |  |
| Mean | 32.1 | 20.6 | 95.9 | 65.6 | 6.9 | 8.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 45.1 |  |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Mini | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 33.6 | 22 | 91 | 60 | 6 | 5 | ------ | ◯ p. |
| 2 | 32.5 | 23.2 | 97 | 77 | 9 | 7 | 0.8 | Ω a. ⊤ ●° p. |
| 3 | 33.8 | 22.1 | 95 | 59 | 6 | 7 | .5 | p p. |
| 4 | 33.2 | 21.7 | 95 | 58 | 7 | 3 | ------ |  |
| 5 | 32.3 | 22 | 95 | 69 | 6 | 6 | ------ |  |
| 6 | 32.4 | 20.8 | 96 | 81 | 5 | 7 | ------ |  |
| 7 | 33.4 | 21 | 97 | 64 | 6 | 5 | ------ |  |
| 8 | 33.3 | 21.3 | 95 | 64 | 4 | 5 | ------ |  |
| 9 | 32 | 20.3 | 96 | 66 | 6 | 6 | .5 |  |
| 10 | 32.4 | 22.2 | 97 | 67 | 10 | 7 | ------ | d a. |
| 11 | 31.9 | 20.5 | 93 | 81 | 6 | 7 | .5 | p p. |
| 12 | 32 | 20.6 | 94 | 64 | 5 | 6 | .3 | p° a. |
| 13 | 32.1 | 22.4 | 94 | 66 | 5 | 7 | ------ |  |
| 14 | 33.2 | 20.7 | 97 | 64 | 6 | 7 | ------ | ⊤ p. |
| 15 | 31 | 21.9 | 93 | 82 | 5 | 7 | .5 | d ⊤ p. |
| 16 | 31.5 | 21.7 | 95 | 74 | 6 | 6 | 1.3 | d a. |
| 17 | 33.5 | 20.6 | 96 | 71 | 3 | 5 | ------ |  |
| 18 | 32.5 | 19.8 | 91 | 66 | 5 | 7 | ------ |  |
| 19 | 32.6 | 22.1 | 91 | 65 | 4 | 7 | ------ |  |
| 20 | 32.8 | 21.6 | 91 | 62 | 5 | 6 | ------ |  |
| 21 | 31.4 | 20.4 | 91 | 71 | 6 | 7 | ------ |  |
| 22 | 32.7 | 18.4 | 95 | 58 | 3 | 3 | ------ |  |
| 23 | 30 | 19.1 | 94 | 69 | 6 | 9 | 1.1 | p a. p° p. |
| 24 | 32.4 | 19.3 | 96 | 64 | 1 | 7 | ------ |  |
| 25 | 33.8 | 22 | 92 | 51 | 6 | 4 | ------ |  |
| 26 | 32 | 19.3 | 95 | 59 | 5 | 5 | ------ |  |
| 27 | 32.4 | 19.5 | 95 | 60 | 4 | 5 | ------ |  |
| 28 | 31.5 | 19 | 91 | 63 | 1 | 6 | ------ |  |
| 29 | 31.9 | 22.7 | 90 | 70 | 9 | 6 | ------ |  |
| 30 | 33 | 21.8 | 91 | 70 | 5 | 5 | ------ |  |
| 31 | 33.2 | 21.5 | 91 | 60 | 3 | 6 | ------ |  |
| Mean | 32.5 | 21 | 93.9 | 66.3 | 5.3 | 6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 5.5 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.6 | 19.8 | 98 | 64 | 7 | 8 | ------ |  |
| 2 | 31.1 | 19.3 | 97 | 63 | 3 | 9 | 39.9 | Ω ≡ a. ⊤° ●² p. |
| 3 | 28.8 | 19 | 98 | 70 | 2 | 6 | ------ |  |
| 4 | 30 | 19.4 | 98 | 64 | 2 | 2 | ------ | Ω ≡ a. |
| 5 | 31.2 | 19.7 | 98 | 63 | 7 | 8 | ------ | ⊤ p. |
| 6 | 31 | 19.2 | 98 | 64 | 5 | 9 | 22.9 | ●² Γ⚡² p. |
| 7 | 28.1 | 19 | 97 | 70 | 8 | 8 | ------ |  |
| 8 | 30.7 | 19.6 | 98 | 63 | 7 | 8 | ------ |  |
| 9 | 31.1 | 19.8 | 98 | 64 | 2 | 3 | ------ | ≡ a. |
| 10 | 31.5 | 19.1 | 97 | 68 | 7 | 8 | ------ | ≡ a. |
| 11 | 30.8 | 19.6 | 98 | 64 | 2 | 6 | ------ | Ω ≡ a. |
| 12 | 31.2 | 19.2 | 98 | 65 | 7 | 8 | 3 | ●° p. |
| 13 | 30.6 | 18.1 | 98 | 63 | 10 | 8 | ------ |  |
| 14 | 30 | 18 | 98 | 66 | 2 | 8 | ------ |  |
| 15 | 30.4 | 18.2 | 98 | 67 | 5 | 9 | ------ | ≡ a. p° p. |
| 16 | 29.6 | 18.4 | 98 | 67 | 2 | 7 | ------ | ≡ a. |
| 17 | 30 | 18.1 | 98 | 68 | 7 | 8 | 3.6 | Ω ≡ a. |
| 18 | 29.5 | 18 | 97 | 72 | 8 | 10 | 11.2 | p a. ● p. |
| 19 | 28.2 | 17.7 | 98 | 70 | 6 | 8 | ------ | ≡ a. |
| 20 | 28 | 17.9 | 98 | 70 | 4 | 8 | 1.3 | ≡ a. p° p. |
| 21 | 27.7 | 17.3 | 97 | 71 | 10 | 7 | ------ |  |
| 22 | 28.1 | 17.7 | 98 | 70 | 2 | 6 | ------ | ⊕ p. |
| 23 | 28 | 18.3 | 97 | 71 | 2 | 2 | ------ | ≡ a. |
| 24 | 28.6 | 18.2 | 98 | 71 | 5 | 8 | ------ | Ω ≡ a. |
| 25 | 29.9 | 18 | 98 | 68 | 2 | 2 | ------ | ≡ a. |
| 26 | 30.5 | 18.3 | 98 | 66 | 7 | 5 | ------ | ≡ a. |
| 27 | 30.2 | 18.8 | 98 | 69 | 4 | 7 | ------ | ≡ a. |
| 28 | 29.8 | 19.1 | 98 | 69 | 2 | 3 | ------ |  |
| 29 | 29.5 | 19 | 97 | 69 | 5 | 7 | ------ | Ω ≡ a. |
| 30 | 30 | 18.7 | 98 | 72 | 2 | 8 | ------ |  |
| 31 | 29.6 | 18.2 | 98 | 70 | 7 | 8 | ------ |  |
| Mean | 29.8 | 18.7 | 97.8 | 67.5 | 4.9 | 6.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 81.9 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32 | 23 1 | 88 | 75 | 8 | 9 | ------ | Ω a. |
| 2 | 32.8 | 22 | 93 | 81 | 7 | 7 | ------ | Ω$^2$ a. |
| 3 | 32.9 | 21.3 | 87 | 61 | 5 | 6 | ------ | Ω$^2$ a. ⌈↯ p. |
| 4 | 32.8 | 21.7 | 90 | 72 | 4 | 8 | ------ | Ω$^2$ a. ⌈↯ p. |
| 5 | 33.7 | 22.2 | 97 | 70 | 5 | 7 | ------ | Ω° a. |
| 6 | 33.7 | 22.9 | 95 | 67 | 7 | 7 | ------ | Ω° a. ⌈↯ p. |
| 7 | 32.3 | 21.1 | 95 | 76 | 6 | 9 | 1 | p ⌈↯ p. |
| 8 | 33.4 | 20.7 | 88 | 65 | 3 | 7 | ------ | Ω a. |
| 9 | 32.6 | 21 | 91 | 62 | 3 | 7 | ------ | Ω$^2$ a. |
| 10 | 33.9 | 21.7 | 96 | 57 | 6 | 5 | ------ |  |
| 11 | 31.7 | 21.2 | 92 | 40 | 7 | 9 | 1.5 | Ω a. ●° p. |
| 12 | 32.8 | 21.5 | 96 | 78 | 6 | 7 | 3.6 | ● p. |
| 13 | 28.8 | 22.3 | 93 | 91 | 10 | 10 | 1 | ●° p. |
| 14 | 32.5 | 21.9 | 95 | 69 | 9 | 7 | 28.4 | ● p. |
| 15 | 31.3 | 20.7 | 98 | 95 | 8 | 9 | 44.4 | ●$^2$ p. |
| 16 | 31.5 | 21.6 | 94 | ------ | 4 | 9 | ------ |  |
| 17 | 31.7 | 21.2 | 97 | ------ | 4 | 8 | ------ |  |
| 18 | 27.3 | 21.5 | 90 | 91 | 8 | 9 | 3 | p a. |
| 19 | 32.3 | 21.2 | 88 | 68 | 4 | 7 | ------ | Ω$^2$ a. |
| 20 | 33 | 21.2 | 85 | 68 | 7 | 9 | ------ |  |
| 21 | 30.3 | 21.1 | 93 | 90 | 8 | 4 | ------ |  |
| 22 | 31.4 | 19.7 | 94 | 55 | 4 | 4 | ------ | Ω° a. |
| 23 | 28.7 | 21.2 | 92 | 89 | 10 | 8 | 1.8 | ⌒ d a. ●° p. |
| 24 | 30.3 | 20 | 96 | 77 | 5 | 6 | 1 | Ω° a. d p. |
| 25 | 31.7 | 21.1 | 97 | 81 | 10 | 8 | 1.8 | d a. p. |
| 26 | 31.8 | 19.4 | 82 | 73 | 3 | 8 | ------ | Ω° a. |
| 27 | 32.4 | 21 | 82 | 64 | 4 | 6 | ------ | Ω° a. |
| 28 | 32.3 | 19 | 88 | 61 | 4 | 6 | ------ | Ω° a. ⌈↯ p. |
| 29 | 31.2 | 20.7 | 82 | 82 | 6 | 9 | ------ | Ω a. |
| 30 | 34 | 20.2 | 92 | 69 | 4 | 5 | ------ |  |
| 31 | 33.1 | 20.5 | 91 | 50 | 2 | 4 | ------ |  |
| Mean | 31.9 | 21.2 | 91.5 | 71.6 | 5.8 | 7.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 87.5 |  |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 28.3 | 22 | 93 | 93 | 10 | 10 | 79.5 | ⌈↯°● a. ⌈↯●$^2$ p. |
| 2 | 31 | 21.6 | 93 | 69 | 10 | 10 | .8 | ●° a. ◯ a. p. ↯ p. |
| 3 | 31.4 | 21 | 97 | 68 | 4 | 4 | ------ | Ω a. ⌒ ↯ p |
| 4 | 30.8 | 21.7 | 97 | 76 | 1 | 8 | ------ | Ω ≡° a. ⊤° ↯° p. |
| 5 | 31 | 22.5 | 97 | 78 | 5 | 10 | ------ | Ω° ≡ a. ⌈↯° ∪ p. |
| 6 | 30.5 | 22.3 | 94 | 69 | 9 | 9 | ------ | Ω a. ⊤° ↯$^2$ p. |
| 7 | 31.2 | 21 | 95 | 71 | 8 | 4 | ------ | ⌈↯ p. |
| 8 | 31.9 | 21.4 | 96 | 69 | 8 | 6 | ------ | Ω ≡° a. d ⌒ p. |
| 9 | 31.2 | 21.4 | 97 | 70 | 2 | 3 | ------ | Ω ≡ a. ∪ p. |
| 10 | 32.1 | 21.7 | 96 | 72 | 9 | 5 | ------ | Ω a. ⊤ ↯ p. |
| 11 | 31.9 | 22.2 | 97 | 72 | 5 | 5 | ------ | Ω ≡ a. ⌈↯ d p. |
| 12 | 32.2 | 22.3 | 87 | 84 | 10 | 9 | 32.3 | ● ⌈↯ d p. |
| 13 | 31.7 | 22.6 | 96 | 70 | 10 | 8 | ------ | ◯° a p. d ↯ p. |
| 14 | 31.7 | 21.8 | 97 | 71 | 8 | 6 | ------ | Ω° a. ⌈↯ d p. |
| 15 | 32 | 21.8 | 97 | 69 | 8 | 5 | ------ | ≡° a. ⊕$^2$ ⌈↯ d p. |
| 16 | 31.4 | 21.9 | 97 | 72 | 7 | 10 | 8.1 | ⌈↯ ● p. |
| 17 | 31.6 | 21.7 | 96 | 69 | 10 | 8 | .8 | ⌈↯ d ⌒ ●° p. |
| 18 | 32.6 | 22.6 | 90 | 64 | 10 | 5 | ------ | ⊕° d ⌈↯ p. |
| 19 | 31.7 | 21 | 89 | 65 | 5 | 5 | ------ |  |
| 20 | 32.3 | 21.6 | 87 | 58 | 4 | 7 | ------ | ⌈↯ p. |
| 21 | 31.9 | 21 | 86 | 63 | 4 | 8 | ------ | d p. |
| 22 | 31.5 | 22.3 | 93 | 67 | 10 | 4 | ------ | d p. |
| 23 | 30.7 | 19.5 | 96 | 65 | 2 | 10 | .3 | Ω ≡° a. d p. |
| 24 | 31.3 | 19.9 | 96 | 65 | 4 | 8 | ------ | Ω ≡° a. ⌒$^2$ d p. |
| 25 | 32.3 | 23.1 | 82 | 74 | 10 | 10 | ------ | d° ⌒ p. |
| 26 | 31 | 21 | 96 | 72 | 3 | 9 | ------ | Ω ≡° a. ⊤ d p. |
| 27 | 31 | 20.1 | 95 | 65 | 2 | 3 | ------ | Ω ≡° a. |
| 28 | 31 | 19.9 | 96 | 65 | 1 | 4 | ------ | Ω ≡° a. |
| 29 | 31.4 | 19.9 | 96 | 66 | 2 | 4 | ------ | Ω ≡° a. |
| 30 | 32.2 | 19.8 | 96 | 63 | 6 | 2 | ------ | Ω ≡° a. |
| 31 | 31.7 | 19.5 | 96 | 65 | 1 | 2 | ------ | Ω ≡° a. |
| Mean | 31.4 | 21.4 | 94.1 | 69.6 | 6.1 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 121.8 |  |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 33.1 | 22.5 | 89 | 62 | 10 | 10 | 25.6 | ● p. |
| 2 | 31.6 | 22 | 94 | 70 | 7 | 9 | ------ |  |
| 3 | 34.1 | 22 | 94 | 58 | 3 | 1 | ------ | Ω a. |
| 4 | 33.9 | 22.4 | 96 | 61 | 0 | 2 | ------ | Ω ≡° a. |
| 5 | 34 | 22.6 | 97 | 62 | 10 | 8 | ------ | Ω a. ⊤ p. |
| 6 | 33.9 | 23 | 93 | 62 | 3 | 4 | ------ | Ω a. |
| 7 | 33.5 | 21.6 | 97 | 60 | 4 | 4 | ------ | Ω ≡ a. |
| 8 | 33.7 | 22.3 | 96 | 60 | 2 | 2 | ------ | Ω ≡° a. |
| 9 | 34 | 22.4 | 96 | 58 | 3 | 3 | ------ | Ω ≡° a. |
| 10 | 34.5 | 22 | 95 | 50 | 3 | 3 | ------ | Ω a. ⌒ d° p. |
| 11 | 34.8 | 22.5 | 96 | 54 | 1 | 2 | 9.7 | Ω ≡° a. ⌈↯ ● p. |
| 12 | 33.8 | 23.2 | 96 | 57 | 3 | 2 | 7.4 | Ω ≡° a. ● p. |
| 13 | 33.6 | 23.6 | 94 | 70 | 4 | 3 | ------ | Ω a. |
| 14 | 34.4 | 22.8 | 95 | 51 | 2 | 9 | ------ | Ω ≡° a. |
| 15 | 33.7 | 22.2 | 96 | 49 | 2 | 3 | ------ | Ω ≡° a. |
| 16 | 32.6 | 22.4 | 96 | 55 | 2 | 7 | ------ | Ω ≡° a. |
| 17 | 34 | 22.2 | 96 | 56 | 9 | 8 | 3.6 | Ω a. ⊤ ● d p. |
| 18 | 32 | 21.8 | 96 | 68 | 3 | 4 | ------ | Ω a. |
| 19 | 33.5 | 21.1 | 86 | 53 | 3 | 3 | ------ | Ω a. |
| 20 | 33.6 | 21 | 82 | 50 | 1 | 2 | ------ | Ω a. |
| 21 | 34 | 20.6 | 92 | 49 | 2 | 3 | ------ | Ω a. |
| 22 | 32.8 | 19.8 | 87 | 53 | 2 | 2 | ------ | Ω a. |
| 23 | 31.1 | 20 | 93 | 64 | 2 | 8 | ------ | Ω a. |
| 24 | 33.5 | 21.4 | 96 | 58 | 3 | 9 | ------ | Ω ≡° a. |
| 25 | 31.7 | 23 | 95 | 67 | 10 | 10 | ------ | Ω a. |
| 26 | 33.5 | 21.2 | 91 | 50 | 8 | 2 | ------ | Ω a. |
| 27 | 33.8 | 20.8 | 93 | 49 | 2 | 3 | ------ | Ω a. |
| 28 | 33.7 | 20.3 | 94 | 48 | 3 | 2 | ------ | Ω a. |
| 29 | 33.7 | 20.8 | 95 | 46 | 2 | 2 | ------ | Ω ≡° a. |
| 30 | 34 | 20 4 | 94 | 47 | 2 | 2 | ------ | Ω a. |
| 31 | 34.9 | 20 6 | 95 | 50 | 2 | 3 | ------ | Ω a. |
| Mean | 33.5 | 21.8 | 93.7 | 56.4 | 3.6 | 4.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 46.3 |  |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.8 | 22.2 | 97 | 81 | 10 | 10 | 0.3 | d$^2$ ⌒ a. ∪ ↯ p. |
| 2 | 32.3 | 23.2 | 96 | 68 | 10 | 7 | ------ | Ω° ≡° a. ↯ ᗜ p. |
| 3 | 31.4 | 22.7 | 96 | 75 | 10 | 1 | ------ | Ω ≡° a. ↯ p. |
| 4 | 32.6 | 22.8 | 97 | 67 | 10 | 2 | ------ | Ω° ≡° a. d ↯ ∪ p. |
| 5 | 30.8 | 23.9 | 95 | 75 | 10 | 9 | 54.6 | ⊤ ●$^2$ ↯ p. |
| 6 | 30.7 | 21 8 | 96 | 74 | 10 | 7 | ------ | Ω° ≡° a. ⊤ ↯° p. |
| 7 | 29.6 | 22.1 | 95 | 70 | 10 | 3 | 2.3 | Ω ≡° a ●° p. |
| 8 | 30.9 | 21.8 | 96 | 75 | 10 | 1 | 22.4 | Ω° ≡° a. ● p. |
| 9 | 31.3 | 22.8 | 96 | 67 | 10 | 5 | ------ | Ω ≡° a. |
| 10 | 32.6 | 23.1 | 93 | 61 | 10 | 8 | 2 | Ω a. ⊤ ↯ ● p. |
| 11 | 31.2 | 21.7 | 94 | 75 | 10 | 1 | 16.5 | Ω a. ● ⊤ ↯ p. |
| 12 | 31 | 23.7 | 97 | 75 | 10 | 1 | 6.6 | Ω ≡ a. ● ⊤ ↯° p. |
| 13 | 30.2 | 23.3 | 96 | 71 | 10 | 10 | 5.6 | Ω ≡° a ● ⊤ ↯° p. |
| 14 | 31.9 | 23.9 | 97 | 75 | 10 | 6 | 35.3 | Ω ≡ a. ⊤ ↯ ● p. |
| 15 | 30.6 | 22.2 | 96 | 70 | 10 | 9 | 17.5 | Ω ≡° a. ● ⊤ ↯ p. |
| 16 | 29.3 | 23.2 | 96 | 82 | 10 | 10 | 16 | Ω ≡° a. ● a. p. |
| 17 | 30.7 | 22 | 96 | 63 | 10 | 10 | 45.5 | Ω ≡° a. ● p. |
| 18 | 27.2 | 22.6 | 96 | 91 | 10 | 10 | 22.9 | ● a d ⌒ p. |
| 19 | 30.4 | 22.1 | 93 | 70 | 10 | 5 | ------ | Ω a. d p. |
| 20 | 30.5 | 22.7 | 88 | 73 | 10 | 10 | 2.3 | d ●° p. |
| 21 | 30.7 | 21 | 95 | 69 | 10 | 5 | ------ | Ω ≡° a. |
| 22 | 30.5 | 21.1 | 94 | 62 | 10 | 4 | ------ | Ω a. |
| 23 | 31.1 | 22.7 | 91 | 67 | 10 | 10 | 12.4 | Ω a. ● p. |
| 24 | 28 | 22.9 | 95 | 81 | 10 | 10 | 31 | ● a. p. d p. |
| 25 | 29 | 22.6 | 88 | 75 | 10 | 10 | ------ | Ω a. |
| 26 | 29.9 | 20.8 | 95 | 68 | 10 | 1 | ------ | Ω ≡° a. |
| 27 | 30 | 20.5 | 94 | 70 | 10 | 1 | 1.8 | Ω a. d ●° p. |
| 28 | 30.1 | 21.5 | 96 | 73 | 10 | 1 | ------ | Ω ≡° a. d p. |
| 29 | 30.8 | 22.7 | 93 | 62 | 10 | 0 | ------ | Ω a d ↯ p. |
| 30 | 31 | 21.5 | 96 | 61 | 10 | 0 | ------ | Ω ≡° a. d ∪ p. |
| 31 | 31.4 | 23.1 | 92 | 68 | 10 | 1 | .3 | Ω a. ∪ ●° p. |
| Mean | 30.6 | 22.4 | 94.7 | 71.4 | 10 | 5.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 295.3 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 28.4 | 22.2 | 81 | 97 | 10 | 10 | 46.2 | ● a. p. |
| 2 | 32.2 | 21.9 | 85 | 65 | 8 | 7 | ------ | |
| 3 | ------ | ------ | 97 | ------ | 3 | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 11 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 12 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 13 | 31.3 | ------ | ------ | ------ | ------ | ------ | ------ | |
| 14 | 31.9 | 23.2 | 97 | 69 | 10 | 7 | ------ | Ω a. |
| 15 | 32 | 23.4 | 95 | 64 | 9 | 3 | .5 | Ω a. |
| 16 | 32 | 23.7 | 97 | 65 | 8 | 6 | ------ | d a. ⛈ p. |
| 17 | 31.9 | 22.2 | 96 | 68 | 5 | 4 | ------ | Ω a. d° ⌒ p. |
| 18 | 31.2 | 22.5 | 95 | 74 | 9 | 9 | .5 | ⌒ ⊤° d p. |
| 19 | 31.2 | 22 | 90 | 68 | 8 | 5 | ------ | |
| 20 | 31.5 | 23.5 | 96 | 65 | 10 | 4 | ------ | |
| 21 | 31.3 | 22.5 | 95 | 65 | 8 | 4 | ------ | |
| 22 | 30.9 | 21.3 | 94 | 69 | 10 | 5 | ------ | |
| 23 | 31.5 | 23 | 88 | 61 | 9 | 5 | ------ | |
| 24 | 31.9 | 23.1 | 91 | 61 | 10 | 4 | ------ | |
| 25 | 32.9 | 23.8 | 88 | 60 | 10 | 5 | ------ | |
| 26 | 32.1 | 22.8 | 93 | 68 | 10 | 3 | ------ | |
| 27 | 32.4 | 22.1 | 90 | 59 | 10 | 3 | ------ | Ω a. |
| 28 | 34.5 | 22.3 | 91 | 66 | 10 | 5 | ------ | Ω a. |
| 29 | 32.7 | 23.1 | 81 | 60 | 10 | 3 | ------ | |
| 30 | 32.8 | 22.5 | 93 | 60 | 10 | 4 | ------ | |
| 31 | 32 | 21.8 | 96 | 59 | 10 | 2 | ------ | Ω a. |
| Mean | 31.8 | 22.6 | 91.9 | 66.2 | 8.9 | 4.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32.5 | 22.9 | 90 | 63 | 10 | 10 | ------ | ◡$^2$ p. |
| 2 | 34.7 | 21.6 | 98 | 55 | 10 | 6 | ------ | ◯° a. ⛈$^2$ ◡ d° p. |
| 3 | 34.2 | 23 | 96 | 55 | 10 | 2 | ------ | ζ° p. |
| 4 | 33.8 | 23 | 97 | 61 | 2 | 2 | 3 | Ω$^2$ ≡° a. ⛈° d$^2$ p. |
| 5 | 33 | 24.1 | 97 | 61 | 10 | 8 | ------ | ⛈° d° p. |
| 6 | 32.3 | 22.6 | 97 | 64 | 10 | 8 | 49.8 | ⛈$^2$ ●$^2$ p. |
| 7 | 31.8 | 20.6 | 100 | 65 | 10 | 2 | ------ | ≡$^2$ a. ⌒° Φ$^2$ p. |
| 8 | 32.9 | 21.8 | 97 | 60 | 8 | 2 | ------ | Ω$^2$ a. |
| 9 | 32.8 | 22.3 | 98 | 58 | 3 | 2 | ------ | Ω° ≡° a. |
| 10 | 31.8 | 22.3 | 97 | 64 | 8 | 9 | 7.9 | Ω$^2$ a. d$^2$ a. p. ⊤° p. |
| 11 | 32.1 | 23.3 | 97 | 68 | 10 | 9 | 32.3 | d$^2$ ●$^2$ ⛈$^2$ p. |
| 12 | 32.8 | 23.1 | 98 | 58 | 10 | 7 | ------ | ⛈° p. |
| 13 | 32.7 | 23.3 | 98 | 59 | 4 | 6 | ------ | Ω$^2$ ⊕° a. ⌒° ζ° p. |
| 14 | 31.5 | 23.5 | 97 | 82 | 10 | 10 | 2 | Ω° d° a. ⊤° d$^2$ p. |
| 15 | 32 | 22.9 | 98 | 67 | 10 | 5 | 4.8 | ⛈° d$^2$ p. |
| 16 | 31.4 | 23.1 | 97 | 62 | 10 | 4 | .8 | ⌒° ⛈° d$^2$ p. |
| 17 | 26.8 | 22.6 | 98 | 96 | 10 | 10 | 16.2 | d$^2$ a. p. ● p. |
| 18 | 27.8 | 22 | 98 | 86 | 10 | 10 | 5.6 | d$^2$ a. p. |
| 19 | 28.5 | 21.8 | 98 | 79 | 10 | 10 | 5.8 | d$^2$ a. p. |
| 20 | 2[illegible].6 | 20.8 | 97 | 91 | 8 | 10 | 6.3 | d$^2$ a. p. |
| 21 | 29.5 | 20.9 | 99 | 64 | 10 | 5 | 1.6 | d$^2$ a p. |
| 22 | 28.1 | 20.9 | 97 | 70 | 4 | 9 | ------ | ≡° ⊕° a. |
| 23 | 30.4 | 21.3 | 97 | 63 | 10 | 6 | ------ | |
| 24 | 28.8 | 21.8 | 98 | 80 | 10 | 9 | 1.5 | d° a. d$^2$ p. |
| 25 | 31.7 | 22.3 | 97 | 58 | 7 | 3 | ------ | |
| 26 | 33 | 20.9 | 96 | 52 | 7 | 1 | ------ | Ω$^2$ a. |
| 27 | 33 | 21.1 | 97 | 54 | 3 | 1 | ------ | Ω° a. |
| 28 | 32.3 | 21.4 | 95 | 57 | 6 | 3 | ------ | Ω° a. |
| 29 | 32.8 | 20.6 | 97 | 57 | 5 | 3 | ------ | Ω$^2$ ≡ a. |
| 30 | 31.8 | 21.4 | 97 | 58 | 6 | 3 | ------ | Ω$^2$ ≡° a. |
| 31 | 32.6 | 21.9 | 96 | 60 | 10 | 3 | ------ | d a. |
| Mean | 31.5 | 22.1 | 97.1 | 65.4 | 8.1 | 5.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 137.6 | |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 10 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 11 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 12 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 13 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 14 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 15 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 16 | 30.2 | 24 | 87 | 69 | 2 | 2 | ------ | |
| 17 | 30.2 | 23 | 88 | 69 | 1 | 4 | 1 | Ω$^2$ a. ζ p. |
| 18 | 31 | 24 | 83 | 69 | 1 | 8 | ------ | Ω a. p ζ p. |
| 19 | 30.9 | 23.2 | 84 | 71 | 3 | 2 | ------ | Ω$^2$ a. ζ p. |
| 20 | 30.9 | 22.1 | 80 | 63 | 1 | 1 | ------ | Ω$^2$ a. |
| 21 | 31.6 | 22.5 | 78 | 59 | 1 | 0 | ------ | Ω$^2$ a. |
| 22 | 29.8 | 22.5 | 74 | 61 | 0 | 0 | ------ | Ω$^2$ a. |
| 23 | 30.2 | 23 | 84 | 61 | 3 | 2 | ------ | Ω$^2$ a. |
| 24 | 30.5 | 24.4 | 84 | 65 | 8 | 2 | ------ | Ω$^2$ a. d p. |
| 25 | 30.5 | 24.4? | 91 | 71 | 9 | 1 | ------ | |
| 26 | 30.1 | 23.4 | 88 | 69 | 7 | 0 | ------ | Ω a. |
| 27 | 30.2 | 22 | 88 | 64 | 0 | 0 | ------ | Ω$^2$ a. |
| 28 | 30.2 | 22 | 86 | 68 | 2 | 2 | ------ | Ω$^2$ a. |
| 29 | 30.5 | 24 | 88 | 68 | 8 | 2 | ------ | Ω a. |
| 30 | 30.6 | 24 | 91 | 76 | 3 | 0 | ------ | Ω a. |
| 31 | 30.5 | 23.4 | 89 | 68 | 1 | 2 | ------ | Ω$^2$ a. |
| | | | | | | | | Ω$^2$ a. |
| Mean | 30.5 | 23.2 | 85.2 | 66.9 | 3.1 | 1.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | ------ | ------ | ------ | 10 | 10 | 11.5 | ● a. p. ◡ p. |
| 2 | ------ | ------ | ------ | ------ | 9 | 8 | ------ | |
| 3 | ------ | ------ | ------ | ------ | 1 | 6 | ------ | |
| 4 | ------ | ------ | ------ | ------ | 0 | 6 | ------ | Ω$^2$ a. ◡ p. |
| 5 | ------ | ------ | ------ | ------ | 1 | 8 | ------ | Ω$^2$ a. |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | 2 | 2 | ------ | Ω$^2$ a. |
| 8 | ------ | ------ | ------ | ------ | 0 | 2 | ------ | Ω$^2$ a. |
| 9 | ------ | ------ | ------ | ------ | 0 | 1 | ------ | Ω$^2$ a. |
| 10 | ------ | ------ | ------ | ------ | 0 | 2 | ------ | Ω$^2$ a. |
| 11 | ------ | ------ | ------ | ------ | 0 | 4 | ------ | Ω$^2$ a. d° p. |
| 12 | 32.8 | 23.5 | 95 | 75 | 0 | 7 | ------ | Ω$^2$ a. ⛈ d° p. |
| 13 | 32.7 | 23 | 96 | ------ | 0 | ------ | ------ | Ω$^2$ a. |
| 14 | 32.2 | 23.3 | 96 | 59 | 0 | 3 | ------ | Ω$^2$ a. |
| 15 | 31.4 | 21.9 | 95 | 64 | 0 | 2 | ------ | Ω$^2$ a. |
| 16 | 31.7 | 22.1 | 94 | 65 | 0 | 3 | ------ | Ω$^2$ a. |
| 17 | 30.7 | 23.6 | 91 | 57 | 1 | 2 | ------ | |
| 18 | 32.8 | 23.5 | 86 | 52 | 3 | 3 | ------ | |
| 19 | 32.9 | 22.3 | 87 | 52 | 0 | 2 | ------ | |
| 20 | 32.6 | 20.4 | 88 | 53 | 0 | 1 | ------ | |
| 21 | 31.9 | 19.7 | 93 | 48 | 0 | 0 | ------ | Ω$^2$ a. |
| 22 | 31.7 | 19.3 | 93 | 52 | 0 | 0 | ------ | Ω$^2$ a. |
| 23 | 31.2 | 20.4 | 90 | 56 | 1 | 1 | ------ | Ω a. |
| 24 | 31.3 | 21.3 | 90 | 56 | 1 | 1 | ------ | Ω a. |
| 25 | 31.7 | 21.4 | 91 | 56 | 0 | 1 | ------ | Ω$^2$ a. |
| 26 | 31.3 | 21.5 | 91 | 54 | 0 | 0 | ------ | Ω$^2$ a. |
| 27 | 31.5 | 20.2 | 96 | 44 | 0 | 1 | ------ | Ω$^2$ ≡° a. |
| 28 | 31.8 | 20.4 | 94 | 46 | 0 | 0 | ------ | Ω$^2$ a. |
| 29 | 31.7 | 20.5 | 95 | 52 | 0 | 0 | ------ | Ω$^2$ ≡° a. |
| 30 | 32.1 | 20.7 | 94 | 54 | 0 | 0 | ------ | Ω$^2$ a. |
| 31 | 31.4 | 20.6 | 96 | 65 | 0 | 4 | ------ | Ω$^2$ ≡° a. |
| Mean | 31.9 | 21.5 | 92.6 | 55.8 | 1 | 2.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 11.5[1] | |

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[1] 30 days of observation.

## SANTO DOMINGO.

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | ------ | ------ | ------ | ------ | 10 | 10 | ------ | d° a. p. |
| 2 | ------ | ------ | ------ | ------ | 10 | 7 | ------ |  |
| 3 | ------ | ------ | ------ | ------ | 8 | 3 | ------ | Ω° p. |
| 4 | ------ | ------ | ------ | ------ | 7 | 8 | 7.6 | d ↯² p. |
| 5 | ------ | ------ | ------ | ------ | 8 | 10 | 5.3 | ● d a. p. |
| 6 | ------ | ------ | ------ | ------ | 7 | 9 | ------ |  |
| 7 | ------ | ------ | ------ | ------ | 8 | 4 | 4.8 | ● a. Ω p. |
| 8 | ------ | ------ | ------ | ------ | 2 | 4 | 2 | v a. Ω a. p. ↯° p. |
| 9 | ------ | ------ | ------ | ------ | 10 | 10 | 6.2 | ● a. d a. p. |
| 10 | ------ | ------ | ------ | ------ | 4 | 10 | 22 | ● p. |
| 11 | ------ | ------ | ------ | ------ | 8 | 4 | ------ | ● a. |
| 12 | ------ | ------ | ------ | ------ | 1 | 5 | 6.4 | ● p. |
| 13 | ------ | ------ | ------ | ------ | 8 | 10 | 2.3 | d a. p. |
| 14 | ------ | ------ | ------ | ------ | 7 | 7 | 4.6 | ●° p. |
| 15 | ------ | ------ | ------ | ------ | 10 | 8 | 10.2 | ⌒² a ● a. p. |
| 16 | ------ | ------ | ------ | ------ | 10 | 10 | 1.2 | ● d² ⌒ a. |
| 17 | ------ | ------ | ------ | ------ | 10 | 10 | 3.8 | d a. ↙° d° p. |
| 18 | ------ | ------ | ------ | ------ | 10 | 8 | 2 | ●° a. p. d p. |
| 19 | ------ | ------ | ------ | ------ | 5 | 3 | .8 | ●° p. |
| 20 | ------ | ------ | ------ | ------ | 1 | 4 | 7.9 | d° ● p. |
| 21 | ------ | ------ | ------ | ------ | 4 | 4 | ------ |  |
| 22 | ------ | ------ | ------ | ------ | 2 | 3 | ------ | Ω p. |
| 23 | ------ | ------ | ------ | ------ | 2 | 6 | ------ | v a. Ω a. p. |
| 24 | ------ | ------ | ------ | ------ | 4 | 2 | ------ | Ω v a. |
| 25 | ------ | ------ | ------ | ------ | 2 | 2 | ------ | d° a. |
| 26 | ------ | ------ | ------ | ------ | 2 | 4 | ------ | Ω p. |
| 27 | ------ | ------ | ------ | ------ | 7 | 8 | 10.2 | ● d a. |
| 28 | ------ | ------ | ------ | ------ | 7 | 6 | 25.4 | d ⌒° ● p. |
| 29 | ------ | ------ | ------ | ------ | 10 | 8 | 2.5 | ●° a. d ⌒ a. |
| 30 | ------ | ------ | ------ | ------ | 7 | 5 | ------ | ⌒° a. Ω p. |
| 31 | ------ | ------ | ------ | ------ | 4 | 5 | ------ | v a. |
| Mean | ------ | ------ | ------ | ------ | 6.3 | 6.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ----- | ------ | 125.2 |  |

# SEISMOLOGICAL BULLETIN FOR OCTOBER, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, 1$^{h}$ 20$^{m}$. **Guam** (Mariana Islands). Earthquake of intensity III.

5, 4$^{h}$ 21$^{m}$. **Tacloban** (NE of Leyte). Oscillatory earthquake of intensity II and 5 seconds' duration.

6, 18$^{h}$ 35$^{m}$ 54$^{s}$.* **Agusan Valley** (E of Mindanao). Earthquake of intensity IV, felt throughout the valley. Seismic record No. 240 (see list), corresponding to this disturbance, appears to contain likewise waves due to a much more distant center.

7, 11$^{h}$ 30$^{m}$. **Southwestern Mindanao.** Earthquake of force III–IV, whose origin was in the northeastern part of the Celebes Sea, between Sarangani and Basilan. It was felt on these two islands and in a large part of Cotabato District.

8, 7$^{h}$ 45$^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity III, which was repeated with the same characteristics at 12$^{h}$ 10$^{m}$. Its origin lay in the southwestern part of Cotabato District.

9, 21$^{h}$ 30$^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity IV, proceeding undoubtedly from the same center as the preceding.

12, 13$^{h}$ 56$^{m}$. **Laoag** (NW of Luzon). Quake of force II–III and very short duration.

13, 5$^{h}$ 37$^{m}$. **Agusan Valley** (E of Mindanao). Earthquake of intensity III–IV, felt throughout the valley. At Butuan were observed oscillations in the directions S–N and E–W, which lasted a few seconds.

13, 5$^{h}$ 37$^{m}$ 59$^{s}$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction E–W, intensity III, duration 10 seconds.

14, 11$^{h}$ 2$^{m}$ 30$^{s}$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction NE–SW, intensity IV, duration 12 seconds.

15, 23$^{h}$ 0$^{m}$. **Sarangani** (S of Mindanao). Earthquake of force IV.

18, 0$^{h}$ 17$^{m}$. **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction NE–SW, intensity II, duration 3 seconds.

20, 22$^{h}$ 7$^{m}$ 42$^{s}$.* **Baler** (E of Luzon). Oscillatory earthquake. Direction N–S, intensity III, duration 4 seconds. Its center appears to have been in the south of Nueva Vizcaya.

22, 12$^{h}$ 4$^{m}$. **Basilan Island** (SW of Mindanao). Earthquake of intensity II.

22, 20$^{h}$ 45$^{m}$. **Guam** (Mariana Islands). Earthquake of intensity III.

25, 21$^{h}$ 47$^{m}$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

26, $19^h$ $54^m$ $11^s$.* **Agusan Valley** (E of Mindanao). Earthquake of force IV, felt throughout eastern Mindanao. Its origin appears to have been identical with that of the disturbances in July.

27, $5^h$ $31^m$ $51^s$.* **Agusan Valley** (E of Mindanao). This second earthquake developed greater intensity than the preceding and was felt within the same territory. Both had their epicenters in the central and southern part of the Agusan Valley, and were well perceptible along the eastern coast of the island, the Sarangani group in the south, and Cotabato District in the west. As regards the north, we have notices only from Butuan and Surigao. In the former place the disturbance was of intensity IV–V and long duration; in the latter, it had intensity II–III. At $11^h$ $30^m$ there was an aftershock of intensity III. In the central portion of the valley repetitions were very frequent during the night of the 26th and forenoon of the 27th. None of these earthquakes appears to have been registered outside of the Archipelago.

28, $17^h$ $37^m$ $56^s$.* **Baguio** (W of Luzon). Oscillatory earthquake. Direction E–W, intensity III, duration 8 seconds.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.$^h$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 238 | 5 | I | V. | 10 28 35 | ------ | ------ | ------ | ------ | ------ | 10 38 | |
| 239 | 5 | I | V. | 14 30 45 | ------ | ------ | ------ | ------ | ------ | 14 47 | |
| 240 | 6 | $I_v$ | V. | 18 35 54 | ------ | ------ | ------ | ------ | ------ | 18 54 | Agusan River Valley and Antilles. |
| | | | W. E | 18 35 54 | ------ | ------ | ------ | ------ | ------ | 18 55 | |
| 241 | 6 | $I_r$ | V. | 22 31 20 | ------ | 22 35 45 | 22 38 12 | 0.01 | 10 | 23 04 | |
| | | | W. E | 22 31 21 | ------ | 22 35 32 | 22 37 07 | .01 | 8.8 | 23 08 | |
| 242 | 7 | $I_r$ | V. | 12 48 45 | ------ | 12 52 24 | 12 54 26 | .02 | 9 | 13 26 | |
| | | | H. NNW | 12 48 45 | ------ | 12 52 04 | 12 55 22 | .07 | 8.4 | 13 20 | |
| | | | W. E | 12 48 45 | ------ | 12 51 26 | 12 53 44 | .01 | 11.2 | 13 23 | |
| 243 | 13 | $I_v$ | V. | 5 37 56 | ------ | 5 38 51 | 5 40 40 | .07 | 2.4 | 5 52 | Vertical component 0.01 mm. Earthquake, III at Aparri (NE of Luzon). |
| | | | H. NNW | 5 37 59 | ------ | 5 39 04 | 5 41 21 | .07 | 6 | 5 56 | |
| | | | W. E | 5 38 00 | ------ | 5 38 56 | 5 40 33 | .05 | 2.8 | 5 50 | |
| 244 | 13 | $I_r$ | V. | 10 41 45 | 10 48 12 | 10 54 26 | ------ | ------ | ------ | 11 29 | |
| | | | H. NNW | 10 41 45 | 10 47 58 | 10 54 03 | ------ | ------ | ------ | 11 32 | |
| | | | W. E | 10 41 45 | 10 48 00 | 10 53 34 | 11 02 52 | .01 | 16.2 | 11 30 | |
| 245 | 14 | I | H. NNW | 0 41 00 | ------ | ------ | ------ | ------ | ------ | 0 50 | |
| 246 | 14 | $I_d$ | V. | 7 41 08 | ------ | 7 41 14 | 7 41 16 | .52 | 2 | 7 44 | V. C. 0.38 mm. |
| 247 | 14 | $I_v$ | V. | 11 02 30 | ------ | 11 03 17 | 11 04 28 | .06 | 2.4 | 11 15 | V. C. 0.01 mm. Eqke., IV at Aparri (NE of Luzon). |
| 248 | 14 | $I_r$ | V. | 20 34 55 | 20 41 02 | 20 46 54 | 20 52 30 | .01 | 12 | 21 41 | |
| | | | H. NNW | 20 34 55 | 20 41 00 | 20 46 29 | 20 49 21 | .04 | 8.4 | 21 33 | |
| 249 | 15 | $I_r$ | V. | 7 31 41 | 7 37 48 | 7 42 09 | 7 43 22 | .01 | 7.2 | 8 36 | |
| | | | H. NNW | 7 31 41 | 7 38 03 | 7 42 13 | 7 43 24 | .13 | 7.2 | 8 28 | |
| 250 | 15 | $I_r$ | V. | 15 35 47 | ------ | 15 38 23 | 15 40 02 | .02 | 11.2 | 16 03 | |
| | | | H. NNW | 15 35 47 | ------ | 15 38 44 | 15 40 38 | .07 | 7.5 | 16 08 | |
| 251 | 16 | $II_d$ | V. | 13 27 27 | ------ | 13 28 01 | 13 28 13 | 1.20 | 2.4 | 13 51 | V. C. 0.42 mm. |
| | | | W. E | 13 27 24 | ------ | 13 28 03 | 13 28 28 | .36 | 4.8 | 13 54 | |
| 252 | 17 | I | H. NNW | 17 26 52 | ------ | ------ | ------ | ------ | ------ | 17 57 | |
| 253 | 17 | I | W. E | 20 01 00 | ------ | ------ | ------ | ------ | ------ | 20 20 | |
| 254 | 19 | $I_d$ | V. | 4 08 39 | ------ | 4 09 01 | 4 09 05 | .03 | 2.4 | 4 11 | V. C. 0.02 mm. |
| 255 | 20 | I | V. | 22 07 42 | ------ | 22 08 10 | 22 08 15 | .18 | 2.4 | 22 13 | V. C. 0.09 mm. Eqke., III at Baler (E of Luzon). |
| 256 | 21 | $I_r$ | V. | 1 53 02 | ------ | 2 00 22 | 2 01 40 | .02 | 9.6 | 2 38 | V. C. 0.05 mm. |
| | | | H. NNW | 1 53 08 | ------ | 2 00 22 | 2 01 08 | .39 | 10.2 | 2 31 | |
| | | | W. E | 1 53 00 | ------ | 2 00 22 | 2 00 52 | .19 | 6.4 | 2 40 | |
| 257 | 23 | $I_d$ | V. | 0 52 00 | ------ | 0 52 24 | 0 52 28 | .02 | 2 | 0 54 | V. C. 0 01 mm. |
| 258 | 23 | $I_d$ | V. | 4 01 46 | ------ | 4 03 24 | 4 03 38 | .24 | 2.4 | 4 10 | V. C. 0.15 mm. |
| 259 | 24 | $I_d$ | V. | 2 09 18 | ------ | 2 09 36 | 2 09 54 | .26 | 2.4 | 2 13 | V. C. 0.24 mm. |
| 260 | 24 | $I_r$ | V. | 8 17 23 | ------ | 8 22 51 | 8 25 59 | .01 | 7.6 | 8 51 | V. C. 0 01 mm. |
| | | | H. NNW | 8 17 24 | ------ | 8 23 01 | 8 24 33 | .24 | 7.2 | 8 56 | |
| 261 | 26 | $I_v$ | H. NNW | 19 54 11 | ------ | 19 56 12 | 19 58 22 | .06 | 7.5 | 20 18 | Eqke., IV, east Mindanao. |
| 262 | 27 | $I_v$ | H. NNW | 5 31 51 | ------ | 5 33 50 | 5 36 06 | .05 | 6.6 | 5 52 | Eqke., IV, east Mindanao. |
| 263 | 28 | $I_v$ | V. | 17 37 56 | ------ | 17 38 19 | 17 38 37 | .58 | 2.4 | 17 46 | V. C. 0.28 mm. Eqke., III at Baguio (W of Luzon). |
| 264 | 30 | $I_r$ | H. NNW | 21 11 02 | ------ | ------ | ------ | ------ | ------ | 21 35 | |
| 265 | 31 | $I_d$ | V. | ------ | ------ | 19 11 41 | 19 11 43 | .07 | 2.4 | 19 15 | V. C. 0.03 mm. |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8.4 seconds; WSW–ENE pendulum, T=8.2 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, 1h 20m. **Guam** (Islas Marianas). Temblor de tierra de intensidad III.

5, 4h 21m. **Tacloban** (NE de Leyte). Temblor oscilatorio, intensidad II, duración 5 segundos.

6, 18h 35m 54s.* **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad IV, sentido en todo el valle. El registro seismográfico No. 240 correspondiente á este temblor parece contener ondas procedentes de un origen mucho más lejano.

7, 11h 30m. **SW de Mindanao.** Temblor de tierra de intensidad III–IV, cuyo origen se hallaba al NE del mar de Célebes, entre Sarangani y Basilan. Fué perceptible en estas dos islas y en gran parte del Distrito de Cotabato.

8, 7h 45m. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III. Repitió con los mismos caracteres á 12h 10m. El origen se hallaba en la parte SW del Distrito de Cotabato.

9, 21h 30m. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV: procedente sin duda del mismo origen que los anteriores.

12, 13h 56m. **Laoag** (NW de Luzón). Temblor de intensidad II–III, y de muy corta duración.

13, 5h 37m. **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad III–IV, sentido en todo el valle. En Butúan se notaron oscilaciones en la dirección S–N y E–W por espacio de pocos segundos.

13, 5h 37m 59s.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E–W, intensidad III, duración 10 segundos.

14, 11h 02m 30s.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección NE–SW, intensidad IV, duración 12 segundos.

15, 23h 00m. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

18, 0h 17m. **Tacloban** (NE de Leyte). Temblor oscilatorio, dirección NE–SW, intensidad II, duración 3 segundos.

20, 22h 07m 42s.* **Baler** (E de Luzón). Temblor oscilatorio, dirección N–S, intensidad III, duración 4 segundos. El origen de este temblor parece se hallaba hacia el S de Nueva Vizcaya.

22, 12h 04m. **Basilan** (SW de Mindanao). Temblor de tierra de intensidad II.

22, 20h 45m. **Guam** (Islas Marianas). Temblor de tierra de intensidad III.

25, 21h 47m. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

26, 19h 54m 11s.* **Valle del Agusan** (E de Mindanao). Temblor de tierra de intensidad IV, sentido en toda la parte oriental de Mindanao; su epicentro parece fué el mismo de los terremotos de Julio.

27, 5h 31m 51s.* **Valle del Agusan** (E de Mindanao). Este segundo terremoto tuvo mayor intensidad que el del día precedente y se sintió en la misma región que aquél. Ambos tuvieron su epicentro en la parte central y Sur del valle agusano, y fueron bien perceptibles en toda la costa oriental de la isla, en el grupo de Sarangani que está al Sur, y en el Distrito de Cotabato que demora al W. De la parte N solo poseemos datos de Butúan y Surigao: en Butúan tuvo intensidad IV–V y larga duración, en Surigao intensidad II–III. A 11h 30m hubo un aftershock ó repetición de intensidad III. En el centro del valle las repeticiones fueron muy frecuentes desde la noche del 26 hasta las 12 m. d. del 27. Ninguno de estos terremotos parece haberse registrado fuera del Archipiélago.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

28, $17^h$ $37^m$ $56^s$.* **Baguio** (W de Luzón). Temblor oscilatorio, dirección E–W, intensidad III, duración 8 segundos.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# BULLETIN FOR NOVEMBER, 1911.

# METEOROLOGICAL BULLETIN FOR NOVEMBER, 1911.

By Rev. JOSÉ CORONAS, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—As is shown by the subjoined table, all the stations within the Philippines recorded a mean monthly pressure which is considerably higher than that for November, 1910. At Manila it departed from the normal for the month by +1.20 millimeters, and from the monthly mean for November of the preceding year by +2.56 millimeters. The highest pressures were observed on the 9th and 10th, while the lowest occurred on the 6th, except in northern Luzon, where they were recorded on the 21st or 22d.

The mean monthly temperature was slightly lower than the corresponding value for the preceding year in central and northern Luzon, while in southern Luzon and the Visayas it was a little higher. The extremes for Manila were 33.9° C. and 16.8° C, registered on the 16th and 30th, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR NOVEMBER, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from Nov., 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from Nov., 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | °*C.* | °*C.* | °*C.* | | °*C.* | |
| Cebu | 759.27 | +2.29 | 761.92 | 9 | 757.18 | 6 | 26.6 | +0.6 | ---------- | ---------- | 21.3 | 6 |
| Iloilo | 59.39 | +2.12 | 61.93 | 9 | 57.31 | 21 | 26.3 | + .2 | 32.2 | 2 | 20.3 | 6 |
| Ormoc | 59.54 | +2.37 | 62.24 | 9 | 57.08 | 6 | 25.5 | ---------- | 32.1 | 16 | 17.9 | 12 |
| Tacloban | 59.70 | ---------- | 62.60 | 9 | 56.38 | 6 | 26.3 | + .2 | 33.5 | 28 | 20.9 | 12 |
| Capiz | 60.04 | +2.77 | 62.72 | 10 | 57.19 | 6 | 26.4 | − .2 | 32.5 | 20 | 21.7 | 12 |
| Calbayog | 59.74 | +2.45 | 62.56 | 9 | 56.31 | 6 | 25.6 | + .1 | 32.9 | 22 | 18.7 | 12 |
| Legaspi | 60.16 | +2.65 | 62.88 | 10 | 56.29 | 6 | 26.6 | + .3 | 33.8 | 23 | 20 | 28 |
| Atimonan | 60.67 | +2.82 | 63.17 | 10 | 57.37 | 6 | 26.6 | + .1 | 29.9 | 1,7 | 20 | 6 |
| Paracale | 60.92 | +2.99 | 63.52 | 10 | 57.17 | 6 | 26.5 | + .2 | 30.8 | 1,22<br>24,25 | 21.1 | 28 |
| Manila | 60.57 | +2.56 | 62.80 | 10 | 57.72 | 6 | 25.1 | − .5 | 33.9 | 16 | 16.8 | 30 |
| San Isidro | 60.84 | +2.89 | 63.08 | 10 | 57.89 | 6 | 25.2 | − .2 | 34 | 24 | 17 | 30 |
| Dagupan | 60.31 | +2.60 | 62.47 | 10 | 57.63 | 6 | 26.1 | − .5 | 34.8 | 16 | 18.9 | 12 |
| Bolinao[1] | 60.47 | ---------- | 62.32 | 10 | 58.27 | 21 | 26.3 | ---------- | 32.6 | 27 | 19.6 | 27 |
| Baguio[2] | 637.55 | +1.72 | 638.88 | 10 | 635.10 | 6 | 17.3 | − .8 | 25 | 19 | 10.9 | 11 |
| Vigan | 760.45 | +2.46 | 762.68 | 10 | 758.46 | 21 | 25.8 | − .9 | 35.2 | 18 | 18.2 | 10 |
| Tuguegarao | 61.84 | +2.44 | 64.26 | 10 | 58.91 | 22 | 24.1 | − .9 | 34.3 | 22 | 16.2 | 11 |
| Aparri | 61.81 | +1.76 | 64.40 | 10 | 58.71 | 22 | 24.7 | − .3 | 33.4 | 1 | 18.1 | 10 |

[1] 22 days of observation.

[2] The barometric readings of this station are not reduced to sea level.

**Precipitation.**—As a consequence of the almost complete absence of atmospheric disturbances in the neighborhood of the Philippine Islands, the period of drought, which had set in during the month of October, continued throughout November and made itself especially felt in central and northern Luzon. The rain gauges of Manila Observatory collected only 6.1 millimeters, which is the absolute minimum for November during the forty-seven years since the beginning of the observatory. The said amount is 124.1 millimeters below the normal for the month, and 178.6 millimeters below the total rainfall during November, 1910.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF NOVEMBER, 1911.

| Station. | Total. | Departure from Nov., 1910. | Rainy days. | Departure from Nov., 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from Nov., 1910. | Rainy days. | Departure from Nov., 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | mm. | | | mm. | | | mm. | mm. | | | mm. | |
| Jolo | 134.6? | | 10 | | 50.3 | 9 | Sumay, Guam | 97.3 | — 75 | 17 | — 5 | 19 | 22 |
| Isabela, Basilan | 13.3 | —321.8 | 3 | —19 | 11.7 | 20 | Calapan | 186.1 | —304.9 | 7 | —19 | 116.1 | 8 |
| Zamboanga | 27.2 | —211.5 | 5 | —13 | 9.7 | 7 | Virac | 137.4 | —250.2 | 20 | — 6 | 41.3 | 6 |
| Davao | 91.9 | — 74.1 | 6 | — 4 | 25.1 | 17 | Nueva Caceres | 44.3 | —484.3 | 9 | —11 | 30.1 | 30 |
| Cagayan, Misamis | .9 | | 2 | | .8 | 4 | Batangas | 2.4 | —357.6 | 3 | —16 | 1.3 | 15 |
| Butuan | 154.1 | — 98.1 | 20 | — 4 | 24.6 | 27 | Atimonan | 52.3 | —413.6 | 14 | —12 | 14.2 | 20 |
| Dumaguete | 42.5 | —213.7 | 8 | —10 | 26.2 | 10 | Silang | 16.6 | —298 | 4 | —11 | 6.8 | 17 |
| Yap, Western Carolines | 75.1 | —182.2 | 18 | — 3 | 13.7 | 5 | Paracale | 112.2 | —583.5 | 18 | — 8 | 16.4 | 9 |
| Surigao | 175.9 | —518 | 20 | — 5 | 35.5 | 17 | Santa Cruz, La Laguna[1] | 27.6 | | 8 | | 18.1 | 17 |
| Maasin | 108.6 | —620 | 7 | —10 | 28.2 | 17 | Manila | 6.1 | —178.6 | 3 | —22 | 5 | 18 |
| Cebu | 54.6 | —194.7 | 8 | — 9 | 15.7 | 10 | Antipolo | 14.7 | —195.4 | 2 | —21 | 14.7 | 17 |
| Iloilo | 72 | —388.5 | 14 | — 6 | 25.1 | 13 | Iba | 0 | — 22.1 | 0 | — 7 | 0 | 0 |
| San Jose Buenavista | 2.1 | | 3 | | 1.3 | 13 | San Isidro | 0 | —120 | 0 | —18 | 0 | 0 |
| Cuyo | 4.5 | —447.9 | 2 | —13 | 2.5 | 5 | Tarlac | 3.6 | — 77.5 | 1 | —12 | 3.6 | 2 |
| Ormoc | 94 | —185.5 | 17 | — 5 | 14.5 | 25 | Baler | 43.5 | | 9 | | 32.8 | 15 |
| Guiuan | 194.7 | | 17 | | 28.9 | 13 | Dagupan | 0 | — 22.5 | 0 | — 9 | 0 | 0 |
| Tacloban | 156.7 | —206.8 | 20 | — 3 | 20.5 | 17 | Baguio | 16.8 | — 56.2 | 1 | —15 | 16.8 | 1 |
| Capiz | 73.5 | | 19 | | 15.5 | 16 | San Fernando, Union | 0 | — 35.5 | 0 | — 3 | 0 | 0 |
| Borongan | 406.9 | — 14.5 | 23 | — 4 | 53.1 | 16 | Echagüe | 6 | —433.6 | 4 | —23 | 4.1 | 2 |
| Calbayog | 82.3 | —300.9 | 21 | — 3 | 16.3 | 23 | Candon | 0 | — 31.8 | 0 | — 6 | 0 | 0 |
| Masbate | 115.5 | — 71.3 | 13 | — 7 | 25.9 | 15 | Vigan | 0 | — 41.1 | 0 | — 4 | 0 | 0 |
| Romblon | 80.6 | —260.7 | 13 | — 8 | 21.6 | 24 | Tuguegarao | 26 | —415.5 | 6 | —10 | 7.4 | 6 |
| Laoang | 475.5 | | 25 | | 95.2 | 24 | Laoag | 0 | — 73.2 | 0 | — 8 | 0 | 0 |
| Gubat | 264.5 | | 23 | | 37.1 | 2 | Aparri | 36.6 | —570.8 | 11 | —10 | 20.4 | 24 |
| Legaspi | 184.4 | —352.4 | 17 | — 7 | 30.7 | 21 | Sto. Domingo, Batanes Is. | 168.9 | —171 | 19 | — 2 | 42.9 | 18 |

[1] 29 days of observation.

## DEPRESSIONS AND TYPHOONS.

Not a single typhoon or depression crossed the Archipelago during this month, the only disturbance which approached it near enough to show some influence recurving toward northeast while still over 200 miles from the easternmost coasts of the Philippines. We shall say a few words concerning this and another disturbance which latter ran its course at a still greater distance out in the Pacific Ocean than the former; for reasons of economy, however, their tracks will be published in the Bulletin for December, 1911.

**The typhoon of October 30 to November 10, 1911.**—The observations made at Guam on October 30 and 31 indicated the existence of a typhoon to the south of the Mariana or Ladrone Islands, which was well developed and not far from Guam, at least on October 31. Whether it had been forming there on the 30th, or came already developed from distant regions, is a question which can not be answered categorically on the strength of the observations of Guam alone; though the former appears to be more probable.

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM, LADRONE ISLANDS, OCTOBER 30 TO NOVEMBER 2, 1911.

| Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfall (daily total). | Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfall (daily total). |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Direction. | Force. | | | | | Direction. | Force. | |
| October 30: | mm. | mm. | | 0-12. | mm. | November 1: | mm. | mm. | | 0—12. | mm. |
| 6 a. m | 758.42 | — 1.98 | ENE | 3 | | 6 a. m | 748.90 | —7.25 | ESE | 8 | |
| 2 p. m | 56.53 | — 1.85 | ENE | 5 | | 9 a. m | 52.10 | —4. | SSE | 7 | |
| October 31: | | | | | | 10 a. m | 51.97 | —4.13 | SSE | 7 | |
| 6 a. m | 56.15 | — 2.27 | NE | 5 | | 11 a. m | 52.02 | —3.28 | SSE | 7 | |
| Noon | 54.25 | — 2.85 | NE | 5 | | Noon | 51.60 | —2.65 | SSE | 6 | |
| 2 p. m | 53.25 | — 3.28 | NE | 6 | | 1 p. m | 51.97 | —1.73 | SSE | 6 | |
| 4 p. m | 52.57 | — 3.73 | NE | 6, 7 | | 2 p. m | 51.72 | —1.53 | SSE | 6 | |
| 6 p. m | 52.15 | — 4.55 | NE | 7 | | 4.30 p. m | 53.12 | + .72 | SSE | 6 | |
| 8 p. m | 51.92 | — 5.78 | NE to NNE | 9 | | November 2: | | | | | |
| 10 p. m | 50.27 | — 7.43 | NE | 9 | | 6 a. m | 56.18 | +7.28 | SSE | 3 | |
| 11 p. m | 47.02 | —10.58 | NE | 9 | 53.3 | 2 p. m | 55.38 | +3.66 | SSE | 3 | 8.9 |

It is not an easy task to follow the course of this typhoon from November 2 to 4. Hence, we claim for this portion of its track (Plate XVI, Bulletin for December) only a probable value. On the one hand, the observations of Guam and Yap seem to indicate that the storm inclined northward; but on the other, it is impossible to satisfactorily explain the fall of the barometers in the Philippines on the 5th, unless we suppose either the existence of a new depression, or that the typhoon of the Marianas had, during those days, moved very slowly and with a strong westerly inclination. The latter hypothesis has been adopted in tracing its track.

On the 6th the typhoon recurved toward northeast, when still far to the east of Luzon, and passed close to the north of the Bonin Islands in the early morning of the 10th. At 6 a. m. of that day the barometer at Chichijima showed 747 millimeters (gravity correction applied), which is 14 millimeters below the reading at the same hour of the preceding day.

**The depression or typhoon of November 4 to 7, 1911.**—In the following table we give the observations made at Guam on November 3 to 6, and at Chichijima from the 6th to the 8th:

METEOROLOGICAL OBSERVATIONS FOR NOVEMBER 3 TO 8, 1911.

| Sumay, Guam, Ladrone Islands. | | | | | | Chichijima, Bonin Islands. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfull (daily total). | Date and hour. | Pressure. | Difference in 24 hours. | Wind. | |
| | | | Direction. | Force. | | | | | Direction. | Force. |
| November 3: | *mm.* | *mm.* | | *0-12.* | *mm.* | November 6: | *mm.* | *mm.* | | *0-12.* |
| 6 a. m | 756.88 | +0.70 | S | 1 | ------ | 6 a. m | 761 | —1 | E | 1 |
| 2 p. m | 55.30 | — .08 | S | 3 | ------ | 2 p. m | 59 | —2 | E | 1 |
| November 4: | | | | | | 10 p. m | ------ | ------ | E | 1 |
| 6 a. m | 56.77 | — .11 | S | 1 | ------ | November 7: | | | | |
| 2 p. m | 55.05 | — .25 | N | 1 | ------ | 6 a. m | 55 | —6 | NE | 1 |
| 4 p. m | 54.05 | —1.03 | N | 2 | ------ | 2 p. m | 51 | —8 | NE | 1 |
| November 5: | | | | | | 10 p. m | ------ | ------ | N | 3 |
| 11 a. m | 55.78 | —1.32 | NW | 3 | ------ | November 8: | | | | |
| Noon | 55.02 | —1.18 | NW | 3 | ------ | 6 a. m | 58 | +3 | NW | 1 |
| 2 p. m | 54.27 | — .78 | NW | 4 | ------ | 2 p. m | 59? | +8 | NNE | 1 |
| 5 p. m | 54.80 | + .70 | WNW | 2 | 8.9 | 10 p.m | ------ | ------ | Calm | ------ |
| November 6: | | | | | | | | | | |
| 6 a. m | 54.50 | — .30 | W | 3 | ------ | | | | | |
| 9 a. m | 55.50 | + .80 | SW | 4 | ------ | | | | | |
| Noon | 55.40 | + .38 | SW | 4 | ------ | | | | | |
| 2 p. m | 55.07 | + .87 | SW | 4 | 1.3 | | | | | |

The observations for Chichijima are published as they have been received, corrected for gravity; but those for Sumay, Guam, are not corrected for gravity.

The striking change in the wind observed at Guam in the afternoon of the 4th, together with the new descent of the barometer, leaves hardly any doubt as to the existence of another depression or typhoon which this time presented itself to the east of the said station, moving toward northwest. A comparison of the observations of Guam with those of Chichijima renders the track of this disturbance as shown on Plate XVI already mentioned, quite probable.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—Según pueden ver nuestros lectores en la tabla que, como de costumbre, acompaña el texto inglés, la media mensual de la presión atmosférica es para todas las estaciones de Filipinas notablemente mayor que la de Noviembre, 1910. La de Manila se diferencia de la normal de este mes en +1.20 mm., y de la media mensual del año pasado en +2.56 mm. Las mayores presiones del mes se observaron los días 9 y 10. Las presiones más bajas se registraron el día 6, excepto en el norte de Luzón, donde tuvieron lugar el 21 ó 22.

La temperatura media mensual es ligeramente menor que la del año pasado para el centro y norte de Luzón, y ligeramente mayor para el sur de Luzón y las islas Visayas. Los valores extremos para Manila fueron 33.9° C y 16.8° C, registrados los días 16 y 30 respectivamente.

**Precipitación acuosa.**—Como efecto de la casi total ausencia de perturbaciones atmosféricas en las cercanías de Filipinas, continuó durante todo este mes el período de sequía iniciado el mes anterior, sobre todo en el centro y norte de Luzón. En los pluviómetros de Manila sólamente se recogieron 6.1 mm. de agua, siendo ésta la mínima cantidad mensual observada en Noviembre en los 47 años que lleva de existencia este Observatorio. Dicha cantidad difiere en —124.1 mm. de la normal de este mes, y en —178.6 mm. de la suma total de agua caida en Noviembre, 1910.

## DEPRESIONES Y TIFONES.

Ningún baguio ó depresión atravesó el Archipiélago durante este mes, y aun el único que llegó á influir en él, recurvó al NE cuando se hallaba aún á más de 200 millas de las costas más orientales. Diremos ahora dos palabras sobre este y sobre otro tifón del Pacífico mucho más lejano todavía, aunque reservamos el publicar sus trayectorias para el boletín de Diciembre.

**Tifón del 30 de Octubre á 10 de Noviembre, 1911.**—Las observaciones hechas en Guam los días 30 y 31 de Octubre (véanse en el texto inglés) señalaban la existencia de un tifón al sur de las islas Ladrones ó Marianas, el cual estaba bien desarrollado y demoraba cerca de Guam, al menos por lo que toca al 31 de Octubre. Si el día 30 se hallaba en formación casi en el mismo sitio, ó si venía formado de más lejos, es cosa que no puede fácilmente asegurarse con solas las observaciones de Guam, aunque lo primero parece ser lo más probable.

Algo difícil es seguir el curso de este tifón del 2 al 4 de Noviembre, y así daremos sólo como probable en la lámina XVI (Boletín de Diciembre) esta parte de la trayectoria. Por un lado las observaciones de Guam y Yap parecían indicar que el tifón se había inclinado al norte: pero por otra parte la bajada de los barómetros observada en Filipinas el día 5 no puede explicarse satisfactoriamente sino es ó introduciendo una nueva depresión ó suponiendo que el tifón de Marianas se había movido aquellos días con mucha lentitud y muy inclinado al oeste. Esto último es lo que hemos supuesto en la trayectoria indicada arriba.

El día 6 cuando se hallaba el tifón aún lejos al E de Luzon, recurvó hacia el NE, viniendo á pasar cerca y por el norte de las islas Bonin la madrugada del día 10. El barómetro de Chichijima marcaba 747 mm. (corregido por gravedad) á 6 a. m. de dicho día 10: 14 mm. más bajo que el día anterior.

**Depresión ó tifón de 4 á 7 de Noviembre, 1911.**—En el texto inglés damos las observaciones hechas en Guam del 3 al 6, y en Chichijima, islas Bonin, del 6 al 8. El cambio notable de vientos observado en Guam desde mediodía del 4, juntamente con una nueva bajada del barómetro, apenas deja lugar á duda sobre la existencia de otra depresión ó tifón que se presentaba esta vez por el E de aquella estación moviéndose al NW. La comparación de las observaciones de Guam con las de Chichijima da como bastante probable la trayectoria de esta depresión ó tifón que publicaremos en la Lámina XVI.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[φ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[2] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[2] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 760.56 | 25.9 | 32.4 | 21.7 | 27.2 | 28.9 | 28.1 | 28.4 | 28.1 | 28.4 | 79.4 | 19.6 | 2.8 | 2.5 |
| 2 | 60.91 | 25.8 | 33.4 | 20 | 27 | 29.2 | 28.1 | 28.5 | 28.1 | 28.4 | 70.5 | 17 | 5.7 | 4.3 |
| 3 | 60.65 | 26.3 | 33.6 | 21.4 | 27.3 | 29.1 | 28.1 | 28.4 | 28.2 | 28.4 | 72.6 | 18.1 | 4.8 | 3.7 |
| 4 | 59.88 | 25 | 32 | 20.4 | 27 | 28.3 | 28.2 | 28.3 | 28.1 | 28.4 | 73.2 | 17 | 4 | 3.1 |
| 5 | 58.41 | 24.5 | 31.4 | 18.8 | 26.3 | 28.1 | 27.9 | 28.1 | 28 | 28.3 | 70.2 | 15.6 | 4.4 | 3.5 |
| 6 | 57.72 | 25.2 | 31.6 | 19.2 | 26.2 | 27.8 | 27.7 | 27.9 | 28 | 28.3 | 72.5 | 17.2 | 4.3 | 3.4 |
| 7 | 58.60 | 25.7 | 31.3 | 21.5 | 26.7 | 28.3 | 27.7 | 28 | 28 | 28.4 | 77.9 | 19 | 3.4 | 2.7 |
| 8 | 60.85 | 26 | 30.9 | 22.3 | 27 | 28.8 | 27.9 | 28.1 | 28.1 | 28.4 | 79.6 | 19.8 | 3.1 | 2.5 |
| 9 | 62.48 | 25.4 | 32 | 21.2 | 27 | 29.3 | 27.9 | 28.2 | 28 | 28.3 | 79 | 18.9 | 3.9 | 2.8 |
| 10 | 62.80 | 25.3 | 31.7 | 22 | 27.3 | 29.2 | 28 | 28.3 | 28 | 28.3 | 73.5 | 17.4 | 4.4 | 3.4 |
| 11 | 62.49 | 23.9 | 29.9 | 19 | 26.8 | 28.1 | 27.9 | 28.1 | 28 | 28.3 | 73.8 | 16 | 3.5 | 2.9 |
| 12 | 62.05 | 24 | 32.1 | 17.7 | 25.7 | 28.2 | 27.5 | 28 | 28 | 28.4 | 73.5 | 15.9 | 5 | 3.9 |
| 13 | 61.84 | 24.6 | 32.2 | 19 | 26 | 27.7 | 27.3 | 27.7 | 28 | 28.3 | 75.3 | 16.8 | 4.5 | 3.7 |
| 14 | 61.64 | 24.4 | 32.1 | 19.7 | 26 | 27.3 | 27.3 | 27.5 | 28 | 28.3 | 77.1 | 17.3 | 4 | 3 |
| 15 | 61 | 24.6 | 32 | 18.5 | 25.2 | 26.9 | 27 | 27.2 | 28 | 28.3 | 79.8 | 18.1 | 2.6 | 2.5 |
| 16 | 60.71 | 26.2 | 33.9 | 21 | 25.7 | 28 | 26.8 | 27.4 | 28 | 28.4 | 73.2 | 18 | 6 | 4.5 |
| 17 | 60.54 | 25.8 | 33.1 | 19.9 | 26 | 27.5 | 27.1 | 27.3 | 28 | 28.3 | 74.9 | 18.1 | 4.9 | 3.8 |
| 18 | 60.71 | 25.9 | 32.2 | 21.7 | 26.1 | 27.6 | 27.1 | 27.4 | 27.9 | 28.2 | 78.8 | 19.2 | 3.9 | 2.9 |
| 19 | 60.56 | 25.6 | 31.4 | 21 | 26.1 | 27.8 | 27.2 | 27.4 | 27.9 | 28.3 | 78.7 | 18.9 | 3.5 | 2.9 |
| 20 | 59.51 | 25.3 | 31.8 | 20 | 25.8 | 27.3 | 27.3 | 27.3 | 27.8 | 28.3 | 75.3 | 17.7 | 3.3 | 2.5 |
| 21 | 58.62 | 25.9 | 33.5 | 21.3 | 25.9 | 27.6 | 27 | 27.2 | 27.8 | 28.1 | 75.6 | 18.4 | 3.8 | 2.9 |
| 22 | 58.64 | 25.4 | 32.4 | 19.9 | 25.7 | 27.8 | 27 | 27.2 | 27.9 | 28.1 | 76.2 | 18.1 | 4.4 | 3.3 |
| 23 | 58.70 | 25.6 | 32.5 | 19.7 | 25.9 | 28 | 27 | 27.4 | 27.9 | 28.1 | 76.2 | 18.5 | 4.2 | 3.2 |
| 24 | 59.61 | 25.6 | 31.8 | 19.7 | 26 | 28.1 | 27 | 27.4 | 27.8 | 28.2 | 77.1 | 18.6 | 4.1 | 3 |
| 25 | 60.47 | 25.8 | 32.7 | 21.1 | 26.3 | 28.3 | 27.2 | 27.6 | 27.8 | 28.2 | 76.3 | 18.5 | 4.4 | 3.7 |
| 26 | 61.08 | 25.1 | 32.7 | 19 | 25.9 | 28.2 | 27.1 | 27.5 | 27.7 | 28 | 75.8 | 17.7 | 3.8 | 2.9 |
| 27 | 61.43 | 24.4 | 32.2 | 19 | 25.5 | 28 | 27.1 | 27.4 | 27.7 | 27.9 | 77 | 17.2 | 4.5 | 3.4 |
| 28 | 61.58 | 24.1 | 31.5 | 18.1 | 25.2 | 27.8 | 26.9 | 27.2 | 27.7 | 27.9 | 74.4 | 16.4 | 4.7 | 3.6 |
| 29 | 61.67 | 23.5 | 32.4 | 17.3 | 24.9 | 27.2 | 26.7 | 27 | 27.7 | 28 | 67.8 | 14.3 | 4.9 | 3.8 |
| 30 | 61.36 | 23.4 | 31.5 | 16.8 | 24.5 | 27.4 | 26.4 | 26.9 | 27.7 | 28.1 | 75.1 | 15.8 | 4.6 | 3.1 |
| Mean | 760.57 | 25.1 | 32.1 | 19.9 | 26.1 | 28.1 | 27.4 | 27.7 | 27.9 | 28.2 | 75.3 | 17.6 | 4.2 | 3.2 |
| Total | | | | | | | | | | | | | 125.4 | 97.4 |
| Departure from normal | +1.20 | −0.8 | +1.8 | —2.3 | | | | | | | —7.2 | —2.8 | | |

| Date. | Wind. | | | | Clouds. | | | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount, mean. | Prevailing form and its direction. | | | | | | | |
| | | | | | | Upper. | | Lower. | | | | | |
| | | *Km.* | *Km.* | | *0-10.* | | | | | *h.* | *m.* | *mm.* | |
| 1 | W quad. | 100 | 13 | WSW | 6 | Ci. | | Cu. | NE | 8 | 50 | | |
| 2 | NE | 183 | 24 | NE | 4.2 | Ci. | E | Cu. | ENE | 9 | 30 | | ψ° p. |
| 3 | NE quad. | 191.5 | 26 | NNE | 4.8 | Ci. | | Cu. | E | 9 | 30 | | ψ p. |
| 4 | Variable | 130 | 15.5 | WSW | 4.4 | Ci. | SE | Cu. | NE | 7 | 55 | | ○ a. |
| 5 | W quad. | 150.5 | 16 | WSW | 5.9 | Ci. | E | Cu. | | 9 | 20 | | Ω ○° a. ψ p. |
| 6 | NW quad. | 237 | 20 | NW | 9.1 | Ci.-S. | | Cu. | | 4 | 55 | | ○ a. p. |
| 7 | NE quad. | 169.5 | 16 | NNE | 10 | Ci.-S. | | Cu. | NE | 1 | 25 | | ○ a. ○² p. |
| 8 | W quad. | 134.5 | 11 | WSW | 9.4 | Ci.-S. | | Cu. | SSW | 4 | 05 | | |
| 9 | SE quad. | 155.5 | 13 | WNW, SE | 5.2 | Ci. | | Cu. | E | 8 | 20 | | |
| 10 | SE quad. | 162.5 | 16.5 | WNW | 5.7 | A.-Cu., Ci. | | Cu. | E | 7 | 40 | | |
| 11 | E quad. | 162 | 15 | WNW | 4.8 | A.-Cu. | | Cu. | E | 7 | 05 | | |
| 12 | E | 192.5 | 24 | E | 3.2 | | | Cu. | ENE | 9 | 45 | | |
| 13 | E quad. | 180 | 22 | ESE | 4.8 | A.-Cu. | | Cu. | E | 6 | 30 | | |
| 14 | NE quad. | 125.5 | 14 | E | 6.3 | | | Cu. | E | 5 | 00 | | |
| 15 | N quad. | 136 | 17 | NNE | 4.9 | | | Cu. | E | 6 | 40 | | d° p. |
| 16 | E quad. | 240 | 26.5 | E | 3.9 | | | Cu. | E | 9 | 45 | | |
| 17 | NE quad. | 246.5 | 24 | ENE | 5.9 | | | Cu. | E | 8 | 25 | 0.8 | ● p. |
| 18 | NE quad. | 152.5 | 17 | NNE | 5.8 | A.-Cu. | | Cu. | E | 6 | 35 | 5 | ● a. d° p. |
| 19 | E quad. | 117.5 | 14 | ENE | 5.6 | Ci.-Cu. | | Cu. | E | 6 | 55 | .3 | p° a. p. |
| 20 | NE quad. | 132.5 | 19 | NNE | 6.4 | Ci., A.-Cu. | | Cu. | E | 6 | 20 | | |
| 21 | E quad. | 85 | 12 | E | 6.1 | Ci. | | Cu. | E | 6 | 45 | | |
| 22 | W quad. | 132 | 15 | W | 3.5 | | | Cu. | E | 8 | 50 | | |
| 23 | W, SE | 129.5 | 15.5 | WbyN | 2.6 | Ci.-S. | | Cu. | E | 9 | 35 | | |
| 24 | W quad. | 105 | 14 | W | 1.8 | | | Cu. | | 9 | 15 | | |
| 25 | NW quad. | 138.5 | 15.5 | WNW | 2.9 | Ci. | | Cu. | ENE | 8 | 45 | | |
| 26 | E quad. | 106 | 14 | WNW | 3.7 | Ci. | | Cu. | E | 8 | 15 | | |
| 27 | SE | 129 | 15 | SE | 2.4 | A.-Cu. | | Cu. | E | 9 | 45 | | |
| 28 | W quad. | 130.5 | 15.5 | NW | 2.8 | Ci. | | Cu. | | 9 | 15 | | |
| 29 | E quad. | 138 | 14 | E | 2 | Ci. | | Cu. | E | 9 | 05 | | |
| 30 | W quad. | 128 | 16 | WSW | 2.3 | Ci.-S. | | Cu. | E | 8 | 45 | | Ω a. |
| Mean | | 150.7 | 17 | | 4.9 | | | | | 7 | 46 | | |
| Total | | | | | | | | | | 232 | 45 | 6.1 | |
| Departure from normal | | —12.9 | | | —1.4 | | | | | +70 | 30 | —124.1 | |

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[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 54′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 759.19 | 27 | ------ | 22.6 | 78.3 | ENE | 9.9 | 3.3 | Ci. | Cu. ENE | ------ | Ω° a. d° ϟ° ⛈° p. |
| 2 | 59.50 | 26.1 | ------ | 22.7 | 75.7 | NNE, SSW | 6.1 | 4.3 | Ci.-.S | Cu.-N. NW | ------ | ψ a. p. Ω° a. |
| 3 | 59.49 | 25.9 | ------ | 22.1 | 74.3 | NE quad. | 6.7 | 5 | A.-Cu. NNE | Cu.-N. NNE, NNW | ------ | Ω° d° a. ⊕ p. |
| 4 | 58.74 | 26 | ------ | 22.5 | 70.7 | NW quad. | 8.1 | 4 | Ci.-S. | Cu. | ------ | ψ p. |
| 5 | 57.45 | 26 | ------ | 21.4 | 63.8 | NW quad. | 7.6 | 2.2 | Ci.-S. | Cu. NNW | ------ | Ω a. ψ p. |
| 6 | 57.18 | 26.5 | ------ | 21.3 | 68.7 | SSE | 7.2 | 5 | Ci.-S. | Cu. | ------ | ○ a. ψ p. |
| 7 | 58.12 | 27.3 | ------ | 23.5 | 70.2 | SSW | 9.1 | 5.7 | Ci.-S. | Cu. | ------ | ○° a. ∞ ϟ° p. |
| 8 | 60.71 | 26.6 | ------ | 23 | 77 | Variable | 5.7 | 5.7 | Ci.-S. | S.-Cu., Cu. | ------ | Ω a. |
| 9 | 61.92 | 25.7 | ------ | 21.8 | 79.3 | ENE | 8.2 | .3 | Ci. | Cu. | 1.3 | Ω a. ∞ ϟ° p. |
| 10 | 61.84 | 26.4 | ------ | 22.8 | 76.3 | NE quad. | 12.3 | 3 | A.-Cu. | Variable | 15.7 | ● a. p. |
| 11 | 61.43 | 25.5 | 29.4 | 22.3 | 71 | NNE | 13.8 | 1.5 | A.-Cu. | Cu. | ------ | |
| 12 | 60.96 | 25.8 | 30 | 22 | 72.8 | NE quad. | 9.9 | 0 | Ci. | Cu. | ------ | Ω a. |
| 13 | 60.22 | 26.5 | 30.2 | 23.1 | 75.5 | NE quad. | 11.8 | 4 | Ci. | Cu. ENE | 15 | Ω d a. ●° ϟ p. |
| 14 | 59.61 | 26.2 | 30.6 | 24 | 83.3 | NE, ENE | 10.6 | 8.7 | Ci.-S., A.-Cu. | N. ENE | 2.9 | ● d a. p. ⛈ ϟ° p. |
| 15 | 59.01 | 27 | 30 | 24 | 77 | NE quad. | 11.3 | 3.3 | Ci. | Cu.-N. ENE | .3 | d a. ϟ p. |
| 16 | 58.64 | 27.3 | 30.2 | 24.9 | 78.2 | NE quad. | 11.8 | 3.2 | A.-Cu., Ci.-S. | N., Cu. ENE | ------ | ● a. ⛈ ϟ p. |
| 17 | 58.70 | 26.2 | 30.5 | 22.2 | 78.7 | NE quad. | 12.2 | 3.7 | A.-Cu. | N., Cu. ENE | 6.4 | d ●° a. p. ⛈ ϟ° p. |
| 18 | 58.97 | 26.7 | 30.4 | 24.5 | 80.3 | NE quad. | 10 | 2.2 | A.-Cu. | Cu.-N. ENE | .5 | d° ● p. |
| 19 | 58.84 | 26.7 | 30.4 | 23.6 | 79.2 | NE quad. | 9.5 | .7 | Ci. | Cu.-N. ENE | ------ | d a. |
| 20 | 58.14 | 27.3 | 30.6 | 24.6 | 76 | NE | 11 | 1.2 | A.-Cu. | Cu. ENE | .3 | Ω a. d p. |
| 21 | 57.46 | 27.2 | 31 | 23.7 | 74.5 | NE quad. | 9.2 | .2 | A.-Cu., Ci. | Cu. | ------ | |
| 22 | 57.40 | 26.7 | 30.4 | 22.5 | 77.7 | ENE | 9.6 | .2 | Ci. | Cu. | ------ | Ω a. ϟ° p. |
| 23 | 57.71 | 26.8 | 30.2 | 23 | 77.7 | ENE | 10.2 | .2 | Ci. | Cu. | ------ | Ω° a. |
| 24 | 58.48 | 27.2 | 30.8 | 23.5 | 75.7 | NE quad. | 9.6 | .5 | Ci., Ci.-S. | Cu. | ------ | Ω a. |
| 25 | 59.27 | 27.4 | 30.9 | 24.2 | 79.5 | NE quad. | 11.2 | 2.5 | Variable | Cu. | 6.4 | Ω a. |
| 26 | 59.78 | 26.8 | 30.6 | 24.2 | 79.5 | NE quad. | 10.8 | 5 | A.-Cu. | Cu. ENE | 5.3 | ● a. p. ϟ° d p. |
| 27 | 59.95 | 26.8 | 30.6 | 22.6 | 76.3 | NE quad. | 10 | 5.8 | Ci.-S. | Cu.-N. EbyN | .5 | ϟ° ⛈° d p. |
| 28 | 60.02 | 27.3 | 31.1 | 23.6 | 76.3 | ENE | 9.9 | 1.2 | Ci. | Cu. | ------ | ⊕ p. |
| 29 | 59.91 | 27 | 31.1 | 23.1 | 76 | NE quad. | 10.1 | 1.5 | A.-Cu. | Cu. NE | ------ | Ω a. |
| 30 | 59.53 | 26.1 | 30 | 22.8 | 77.7 | NE, ENE | 8.2 | 4 | Ci.-S. | Cu.-N. ENE | ------ | Ω° a. d° ϟ° p. |
| Mean | 759.27 | 26.6 | 30.4 | 23.1 | 75.9 | ------------ | 9.7 | 2.9 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 54.6 | |

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 759.36 | 25.7 | 31.1 | 24.2 | 86.8 | NE | 6.7 | 8.2 | Ci.-S. | Cu. NE | 5.1 | Ω a. ● ϟ p. |
| 2 | 59.74 | 26.9 | 32.2 | 23.1 | 75.5 | NE | 8.8 | 6.5 | Ci. | Cu. NE | ------ | ψ p. |
| 3 | 59.84 | 26 | 31.6 | 23.4 | 81.5 | NE | 7.2 | 8.3 | A.-Cu. E | Cu. NE | 3.3 | ○ a. ● a. p. ϟ p |
| 4 | 59 | 26.1 | 31 | 23 | 74.5 | NE | 9.9 | 7.8 | Ci. | Cu. NE | ------ | Ω ≡° a. d ψ p. |
| 5 | 57.92 | 25.6 | 31.5 | 21.7 | 72.3 | NE | 6.1 | 8.5 | Ci. | Cu. N, NW | ------ | Ω ○ a. ψ ψ² p. |
| 6 | 57.43 | 25.5 | 29.9 | 20.3 | 73.2 | SW | 6.5 | 9 | A.-Cu. N | Cu. | ------ | ψ Ω a. |
| 7 | 58.30 | 26.3 | 30.4 | 22.2 | 79.7 | SW | 9.4 | 8.7 | Ci. | Cu. | 10.2 | ψ Ω a. ⊤ ϟ ● p. |
| 8 | 60.75 | 26.1 | 30.1 | 22.9 | 81.3 | NE | 5.2 | 9.3 | Ci. | Cu. S | ------ | ψ° p. |
| 9 | 61.93 | 26.5 | 30.9 | 22.9 | 78.8 | NE | 9.3 | 4.3 | Ci. | Cu. NE | ------ | Ω² a. ∞ p. |
| 10 | 61.82 | 26.2 | 30 | 23 | 76.3 | NE | 14 | 2.7 | Ci. | Cu. NE | ------ | Ω a. ∞ p. |
| 11 | 61.52 | 25 | 29.3 | 21.5 | 74.3 | NE | 14.4 | 2.7 | Ci. | Cu. NE | ------ | Ω a. ∞ p. |
| 12 | 61 | 25.2 | 30.6 | 20.8 | 74.2 | NE | 12.8 | 1.8 | Ci. | Cu. NE | ------ | Ω² a. |
| 13 | 60.16 | 26.5 | 31.5 | 22.9 | 75.5 | NE | 13.6 | 4.3 | Ci. | Cu. | 25.1 | Ω² a. ϟ ● p. |
| 14 | 59.73 | 25.7 | 30 | 23.6 | 85.2 | NE | 12.2 | 9.7 | Ci.-S. | Cu. NE | 3 | d ● a. p. ϟ p. |
| 15 | 59.21 | 26.4 | 31.1 | 23.7 | 82.3 | NE | 13 | 8 | Ci. | Cu. NE | ------ | ≡° a. ⊤ ϟ d p. |
| 16 | 58.71 | 27.2 | 31.2 | 24.2 | 77.7 | NE | 14.4 | 4.7 | Ci. | Cu. NE | .3 | Ω² a. ϟ p. |
| 17 | 58.67 | 26.8 | 30.7 | 23.6 | 78.3 | NE | 15.5 | 3.8 | Ci., A.-Cu. | Cu. NE | 1.8 | ⌒ d a. ●° a. p. ϟ p. |
| 18 | 58.98 | 26.3 | 30.9 | 23 | 80.3 | NE | 14.7 | 5.5 | Ci., Ci.-S. | Cu. | 2.9 | d a. ● a. p. |
| 19 | 58.86 | 26.8 | 31.3 | 22.9 | 78.7 | NE | 12.3 | 3.8 | Ci. | S.-Cu. NE | ------ | ϟ p. |
| 20 | 58.12 | 27 | 31.3 | 24.3 | 79.7 | NE | 12.4 | 3 | Ci.-S. | Cu. | 2 | d ● ⌒ a. ϟ p. |
| 21 | 57.31 | 27.3 | 31.9 | 24 | 73.8 | NE | 11.8 | 2 | Ci. | Cu. | ------ | Ω a. |
| 22 | 57.46 | 27 | 31.5 | 24.1 | 78.5 | NE | 11.3 | 2.7 | Ci. | Cu. | ------ | Ω² a. < p. |
| 23 | 57.76 | 27.1 | 31.6 | 23.9 | 77.5 | NE | 11.7 | 3.2 | Ci. | Cu. NE | .8 | Ω a. |
| 24 | 58.48 | 27.5 | 31.7 | 24.4 | 76.7 | NE | 10.9 | 3.2 | Ci. | Cu. | ------ | ● a. |
| 25 | 59.28 | 26.9 | 31.1 | 24.2 | 76.8 | NE | 13.2 | 4.8 | Ci. | Cu. | ------ | Ω² a. |
| 26 | 59.80 | 26.3 | 30.7 | 23.3 | 78.8 | NE | 12 | 6 | Ci. | Cu. NE | 2.3 | d° ⛈ ● p. |
| 27 | 60.32 | 25.6 | 31 | 23 | 80 | NE | 10.9 | 6.8 | Ci., Ci.-S. | Cu. | 2.8 | ⌒ d ● a. |
| 28 | 60.32 | 26.5 | 31.4 | 23.9 | 79.5 | NE | 10.8 | 5.7 | A.-Cu., Ci. | Cu. NE | ------ | Ω² d a. |
| 29 | 60.20 | 26.4 | 31 | 22.8 | 78.7 | NE | 10.9 | 3.7 | A.-Cu., Ci. | S.-Cu. NE | .5 | Ω² ●° a. |
| 30 | 59.85 | 24.7 | 30.3 | 22 | 85.7 | NE, N | 9.9 | 8.2 | Ci.-S. | Cu. | 11.9 | Ω² a. ● d p. |
| Mean | 759.39 | 26.3 | 31 | 23.1 | 78.4 | ------------ | 11.1 | 5.6 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 72 | |

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[1] All the mean values given in these tables are deduced from six daily observations.

## METEOROLOGICAL DATA, ETC.—Continued.

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0–10. | | | mm. | |
| 1 | 759.37 | 25.1 | 31.1 | 22.3 | 91.3 | Variable | 4.3 | 6.7 | Ci.-S. E | Cu.-N. ENE | 9.1 | ≡° ⌒° ⊤ ● < ⊔° |
| 2 | 59.55 | 25.2 | 30.9 | 20.9 | 82.2 | N quad. | 6.1 | 8.3 | Ci.-S. E | Cu.-N. NE | ------ | ≡° a. ⊔² Φ² p. |
| 3 | 59.52 | 25.5 | 31.7 | 21.2 | 83.8 | N | 6.4 | 8.2 | Ci.-S. E | Cu.-N. NE | ------ | ≡° a. |
| 4 | 58.83 | 25.3 | 30.9 | 21.4 | 79.5 | N | 6.5 | 8.8 | Ci. E | Cu.-N. N, NNW | ------ | Φ ⊔² p. |
| 5 | 57.48 | 24.5 | 29.2 | 20.3 | 81 | N, NW | 5.9 | 8.8 | Ci. E | Cu.-N. NW | ------ | ◯° Φ ⊔° p. |
| 6 | 57.08 | 24.9 | 27.9 | 21.3 | 82.5 | N, NW | 3.8 | 9.3 | Ci.-S. | Cu.-N. WNW | .8 | ≡° a. p° p. |
| 7 | 58.41 | 26.4 | 30.5 | 23.3 | 79.8 | NW quad. | 4.1 | 10 | Ci.-S. | Cu.-N. W | 5.1 | d° a. |
| 8 | 61 | 25.3 | 30.1 | 21.1 | 84.7 | S | 4.8 | 8.2 | Ci.-S. | Cu.-N. SW, W | ------ | d ≡° a. ⊔° p. |
| 9 | 62.24 | 25.1 | 31.1 | 19.8 | 81.2 | NE quad. | 5.1 | 5 | Ci. | Cu. S | ------ | Φ° p. |
| 10 | 62.08 | 25.2 | 31 | 20.8 | 81.5 | N, S | 5.8 | 5.2 | Ci., Ci.-S. | Cu.-N. | ------ | ≡° a. |
| 11 | 61.82 | 24.4 | 31.2 | 19.4 | 75.3 | Variable | 5.8 | 3 | Ci. | Cu. N | ------ | |
| 12 | 61.24 | 24.2 | 31.2 | 17.9 | 79.3 | N | 7 | 3.2 | Ci., Ci.-S. | Cu. ENE | ------ | |
| 13 | 60.54 | 25 | 29.7 | 21.5 | 84 | N quad. | 5.8 | 7.2 | Ci.-S. | Cu.-N. NE | 7.4 | p a. p. Γ< d < p. |
| 14 | 59.85 | 25.8 | 30.8 | 23 | 82 | N quad. | 8.1 | 7.8 | Ci.-S. E | Cu.-N. E | 11.7 | ⌒° a. ● a. p. ⊤ < |
| 15 | 59.32 | 26.4 | 30.5 | 22.5 | 80.8 | N quad. | 6.3 | 8.2 | Ci.-S. | Cu.-N. ENE | ------ | ≡° ⊤ ⌒ < p° |
| 16 | 58.98 | 27.6 | 32.1 | 23.2 | 73.2 | NE | 7.8 | 6.7 | Ci.-S. | Cu.-N. E | 2.3 | p ⌒² p. |
| 17 | 59.12 | 25.4 | 29.5 | 22.8 | 85.2 | NE quad. | 7 | 9.3 | Ci.-S. E | Cu.-N. E | 5.9 | d a. ●° < ⊤ p p. |
| 18 | 59.28 | 25.5 | 31.9 | 22.4 | 87.5 | NW quad. | 6 | 5.8 | A.-Cu., Ci.-S. | Cu.-N. E | 7.1 | ≡ p a. ● p. |
| 19 | 59.26 | 25.7 | 30.2 | 23 | 86.8 | N, W | 5.5 | 6.5 | A.-Cu. E | Cu.-N. E | 1.3 | p ⌒° a. d p. |
| 20 | 58.42 | 25.4 | 30.8 | 22.2 | 87.7 | N | 5.3 | 4 | Ci. | Cu.-N. E | 10.9 | ≡° a. ● ⊤ p. |
| 21 | 57.70 | 25.4 | 30.3 | 20.1 | 84.3 | N | 6.1 | 3.3 | Ci. N | Cu.-N. ENE | 5.9 | ≡° a. ⊤ ● < p. |
| 22 | 57.74 | 26 | 30.9 | 22.1 | 84.2 | N | 5.3 | 6.2 | A.-Cu., Ci. | Cu.-N. ENE | 2 | d ≡° a. |
| 23 | 58.07 | 26.2 | 31.9 | 22.4 | 85.3 | Variable | 4.1 | 5.3 | A.-Cu. | Cu.-N. E | ------ | ≡° a. |
| 24 | 58.83 | 25.5 | 31.1 | 20.6 | 86.2 | NW quad. | 5.8 | 2.8 | Ci. | Cu. E | ------ | ≡° a. |
| 25 | 59.66 | 25.2 | 30 | 21.5 | 88 | N quad. | 5 | 6.2 | A.-Cu. | Cu.-N. E | 14.5 | ≡° a. ● ⊤ p. |
| 26 | 60.04 | 26.5 | 30.9 | 23 | 79 | NE quad. | 6.3 | 6.2 | A.-Cu. E | Cu.-N. NE | 2.3 | p ⊤ p. |
| 27 | 60.24 | 26.3 | 31.8 | 21.8 | 78.2 | NE quad. | 6.2 | 5 | Ci., Ci.-S. | Cu.-N. E | ------ | ≡° a. < p. |
| 28 | 60.39 | 25.5 | 30.3 | 22.6 | 87.3 | N | 5.2 | 6.2 | A.-Cu. | Cu.-N. E | 6.7 | ≡° a. ⊤ ● p. |
| 29 | 60.16 | 25.7 | 30.1 | 22.1 | 81.7 | N, NE | 5.2 | 5.2 | A.-Cu. ENE | Cu.-N. NE | .5 | ≡° a. p p. |
| 30 | 59.85 | 25.1 | 27.8 | 22.7 | 89 | N | 4.4 | 7.7 | Ci.-S. | Cu.-N. E | .5 | ≡° p a. d < p. |
| Mean | 759.54 | 25.5 | 30.6 | 21.6 | 83.1 | ------------ | 5.7 | 6.5 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 94 | |

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0–12. | 0–10. | | | mm. | |
| 1 | 759.48 | 26.3 | 30.4 | 24.2 | 88.7 | N quad. | 1 | 6.2 | Ci., Ci.-S. W | Cu. NE | 10.5 | ● a. p. Γ< ⊔² Φ² p. |
| 2 | 59.50 | 26.9 | 30.8 | 24 | 80.7 | N quad. | 1.8 | 6.2 | Ci. W | Cu. NNE, NE | ------ | ◯² a. p. ⊔² Φ² p. |
| 3 | 59.58 | 26.5 | 30.7 | 24 | 83.8 | N | 1.2 | 7.5 | Ci. WbyN, WSW | Cu. NE | 3 | ● a. p. ⌒ p. |
| 4 | 58.73 | 26.3 | 30.2 | 23.9 | 76.2 | N quad. | 1.8 | 7.7 | Ci. NW quad. | Cu. NE | ------ | ◯² a. p. ⊔² Φ² p. |
| 5 | 57.03 | 26.4 | 29.6 | 23.6 | 73.3 | NW quad. | 2.2 | 7.7 | Ci. WSW, SW | Cu. N, NNW | ------ | d a. ◯² a. p. ⊔² Φ² |
| 6 | 56.38 | 26.1 | 30.5 | 23.5 | 76.3 | WNW | 2.8 | 8.2 | Ci. SSW | Cu., Cu.-N. NW | ------ | ⊔² Φ² a. ◯² a p. d |
| 7 | 57.88 | 26.4 | 29.5 | 24 | 79.3 | WNW | 2.3 | 8.8 | Ci. | Cu.-N. NW | .8 | ● p. |
| 8 | 60.86 | 26.4 | 30.2 | 23.3 | 80.5 | NW | 1.2 | 6.3 | Ci.-Cu., Ci. | Cu.-N. W | ------ | Ω² p. |
| 9 | 62.60 | 26.3 | 32.6 | 23 | 79.8 | WNW, NW | 1.2 | 4.3 | Ci. | Cu.-N. NNE | ------ | Ω² ⊔² Φ² a. |
| 10 | 62.53 | 26.4 | 31.1 | 23.3 | 76.2 | N quad. | 1 | 5.3 | A.-Cu. | Cu. NNE | 3.8 | ● d Ω² p. |
| 11 | 62.18 | 25.9 | 31.4 | 22.3 | 72.5 | E quad. | 1 | 3 | ------------ | Fr.-Cu. NNE | ------ | Ω² a. p. |
| 12 | 61.52 | 26 | 31.5 | 20.9 | 77.7 | SE quad. | .7 | 2.3 | ------------ | Cu. E, ENE | ------ | Φ² a Ω² a. p. |
| 13 | 60.90 | 25.8 | 31 | 23.2 | 87.8 | ENE | 1 | 6.2 | ------------ | Cu.-N. ENE | 17.2 | Ω² d a. ● p. |
| 14 | 60.28 | 26 | 28.7 | 24 | 85.3 | NE | .8 | 8.2 | ------------ | N. ENE | 11.3 | ● a. p. < p. |
| 15 | 59.85 | 26.1 | 30.7 | 23.7 | 87.2 | NE quad. | 1 | 8.7 | ------------ | N. ENE | 8.6 | ⌒ a. ● a. p. |
| 16 | 59.38 | 26.6 | 30.8 | 23.2 | 85.2 | NE quad. | 1.2 | 6.8 | Ci.-S. | Cu., Cu.-N. ENE | 8.3 | ⌒ a. ● a. p. |
| 17 | 59.54 | 25.2 | 28.8 | 23.4 | 91.7 | N quad. | .7 | 7.7 | ------------ | N. ENE | 20.5 | ● a. p. |
| 18 | 59.55 | 25.4 | 31.4 | 23.8 | 90.8 | NW quad. | 1 | 8.3 | Ci.-S. | Cu.-N. NE | 8.1 | ● d a. p. |
| 19 | 59.57 | 25.8 | 30.4 | 23.4 | 89.7 | NW quad. | .8 | 6.7 | ------------ | Cu.-N. NE | 4.6 | ⌒ a. ● a. p. |
| 20 | 58.63 | 26 | 31.1 | 23.6 | 89 | WNW | .8 | 4.2 | ------------ | Cu.-N. NEbyE | 3.8 | ⌒ d a. ● a. p. ⊤ p. |
| 21 | 58.06 | 26.2 | 30.9 | 23.2 | 86.8 | Variable | .7 | 4.8 | ------------ | Cu.-N. ENE | 4.5 | ≡° a. ● Ω² a. p. d |
| 22 | 57.96 | 26.8 | 30.5 | 23.9 | 84 | NW | .8 | 5.7 | ------------ | Cu.-N. NE | 10.7 | ● a. p. |
| 23 | 58.24 | 27 | 31.6 | 24 | 84.5 | SE quad. | .7 | 3.8 | ------------ | Cu. NE | ------ | Ω² p. |
| 24 | 58.89 | 26.6 | 31.7 | 23.5 | 86.7 | WNW, N | 1 | 3.2 | ------------ | Cu. NE | 7.6 | ● p. |
| 25 | 59.87 | 26.3 | 31 | 23.8 | 88.2 | N | 1 | 3.5 | Ci.-Cu. SW | Cu. NE | 11.7 | ● a. Ω² a. p. |
| 26 | 60.50 | 26.2 | 30.5 | 23.4 | 84.3 | NE quad. | 1 | 6.8 | ------------ | N., Cu.-N. ENE | 3.1 | ● a. p. |
| 27 | 60.45 | 26.8 | 32.1 | 23.6 | 81 | N quad. | 1.2 | 6.8 | Ci. SW | Cu.-N. NE | 1.8 | Ω² d. a. |
| 28 | 60.57 | 26.6 | 33.5 | 23.8 | 87.7 | WNW | 1 | 6.5 | Ci.-S. SW | Cu. ENE | 5.6 | ● a. p. ⌒ p. |
| 29 | 60.44 | 26.7 | 31.1 | 24.2 | 86.2 | Variable | 1 | 5.3 | Ci.-S. SW | Cu. NE | 6.4 | ● a. |
| 30 | 60.11 | 25.8 | 29.3 | 23.2 | 87.7 | Variable | .8 | 7.5 | ------------ | N., Cu.-N. ENE | 4.8 | ● a. p. |
| Mean | 759.70 | 26.3 | 30.8 | 23.5 | 83.6 | ------------ | 1.2 | 6.1 | ------------ | ------------ | ------ | |
| Total | -------- | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 156.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. |  |  |  |
|  |  |  |  |  |  |  |  |  | Upper. | Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.85 | 27.7 | 32.3 | 24.4 | 82.7 | NE | 8.4 | 7 | Ci. NE | N. NE | 9.6 | Ф° ☇ T° ● ⌈☇ p. |
| 2 | 60.23 | 27.1 | 30.8 | 24.4 | 79.7 | NE | 9.2 | 7.7 | Ci.-S. | Fr.-N. NE, N | 5.3 | ⊕ C a. ●° p. |
| 3 | 60.16 | 27 | 31.9 | 24.4 | 81.3 | N | 7.9 | 9.3 | Ci.-S. | N. NE, N | 2.8 | ● a. p. ☇ p. |
| 4 | 59.56 | 27 | 30.9 | 25.2 | 72.2 | N | 15.7 | 7.7 | Ci., Ci.-S. | Cu. N | ------ | ⊕° C° a. Ф° ω$^2$ p. |
| 5 | 58.17 | 26.5 | 31.8 | 24.5 | 73.2 | N, NW | 9.7 | 6.7 | Ci., Ci.-S. | Cu. N | ------ | ⊕° ◯° a. ω$^2$ p. |
| 6 | 57.19 | 26.6 | 31.4 | 22.8 | 78 | NW quad. | 6.7 | 8.5 | Ci.-S. N | N. NW | ------ | ☇ d° p. |
| 7 | 58.23 | 26.6 | 32.4 | 23.1 | 83.5 | Variable | 4.4 | 8.8 | Ci.-S. | Cu. S | ------ | ⊕ ◯ a. p. ☇ ω° p. |
| 8 | 60.91 | 26.2 | 31.7 | 23.1 | 85.3 | NE | 4 | 8.7 | Ci.-S. | N. NE | 5.6 | d° a. ● p. |
| 9 | 62.44 | 26 | 30.9 | 23.8 | 88.3 | N, NE | 5.1 | 8.3 | Ci.-S. | N. NE | 12.2 | ● a. |
| 10 | 62.72 | 26.1 | 31.3 | 23.2 | 83.3 | N, NE | 7.6 | 6.8 | Ci.-S. NE | Variable NE | .5 | d° a. ●° p. |
| 11 | 62.34 | 25.6 | 30.9 | 22.6 | 78.8 | NE | 6.5 | 5.3 | Ci.-S. | Fr.-N. NE | ------ |  |
| 12 | 61.93 | 25.2 | 30.6 | 21.7 | 81.8 | NE | 7.5 | 5.3 | Ci.-S. | Cu. NE | ------ | d° p. |
| 13 | 61.20 | 26.6 | 31.6 | 24 | 84.3 | NE | ------ | 7.8 | Ci.-S. | N. NE | 5.3 | ● ☇ p. |
| 14 | 60.58 | 26.4 | 31.2 | 23.9 | 84.3 | NE | ------ | 7.8 | Ci.-S. | N. NE | .3 | ● a. T° p. |
| 15 | 59.96 | 25.7 | 30.3 | 24.8 | 89.8 | NE | 8.9 | 6.5 | Ci.-S. NE | N. NE | 6.9 | d° a. ● a. p. ☇ p. |
| 16 | 59.82 | 26.4 | 31.5 | 24.5 | 88.7 | NE | 9.9 | 6.3 | Ci., Ci.-S. NE | N. NE | 15.5 | ●° a. ● T ☇ p. |
| 17 | 59.73 | 26.9 | 31.5 | 24.7 | 84 | NE, E | 11.4 | 5.3 | Ci. | N., Cu. NE | ------ | ●° a. ☇ d° p. |
| 18 | 59.90 | 26.6 | 31.3 | 24.1 | 86.2 | NE | 10.1 | 7.2 | Ci.-S. | N., Cu. NE | 2 | ●° p. |
| 19 | 59.70 | 26.5 | 31.5 | 24.6 | 88 | NE | 7.9 | 5.8 | Ci, Ci.-S. | Cu., Fr.-N. NE | 2 | ●° ☇ p. |
| 20 | 58.76 | 26.8 | 32.5 | 24.7 | 85.7 | NE | 9.1 | 3.3 | Ci. | Variable NE | .8 | ●° a. p. |
| 21 | 58.07 | 26.8 | 31.5 | 24.6 | 87.2 | NE | 7.4 | 4.5 | Ci. | Cu., N. NE | ------ | ☇ p. |
| 22 | 58.06 | 26.8 | 31.5 | 24.8 | 87.7 | NNE | 6.8 | 5.2 | Ci, Ci.-S. | N. NNE | ------ | d° a. |
| 23 | 58.38 | 26.2 | 31.4 | 23.5 | 88 | NE quad. | 3.2 | 2.5 | Ci, Ci.-S. | Variable NE | ------ |  |
| 24 | 58.97 | 27.2 | 31.8 | 24.9 | 86.7 | NE | 6.7 | 5.2 | Ci.-S. | N. NE | .3 | d° p. |
| 25 | 60 | 26.9 | 31 | 25.2 | 82.8 | NE | 9.6 | 8.5 | Ci.-S. | N. NE | ------ | ●° a. |
| 26 | 60.81 | 25.7 | 30 | 24.3 | 86 | NE | 7.5 | 6.5 | Ci.-S. | N. NE | .8 | ●° a. d° a. p. ☇° p. |
| 27 | 61.09 | 26.5 | 30.8 | 24.2 | 80.7 | NNE, NE | 9.4 | 6.8 | Ci.-S. NNE | N. NE | ------ | d° a. |
| 28 | 60.92 | 26.2 | 30.8 | 24.5 | 87.2 | N, NE | 6.2 | 7.5 | Ci. | N. N | 1.3 | d° ●° p. |
| 29 | 60.82 | 26 | 30.8 | 23.6 | 88.7 | NE quad. | 6 4 | 5.5 | Ci.-S. | N. NE | 2 | ●° a. |
| 30 | 60.56 | 25.2 | 29.8 | 23.4 | 88.7 | N | 9.7 | 8.3 | Ci.-S. | N. N | .3 | ●° a. d° p. |
| Mean | 760.04 | 26.4 | 31.3 | 24 | 84.1 | ------ | 7.4 | 6.7 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 73.5 |  |

### CALBAYOG.

[$\phi$=12° 04′ N; $\lambda$=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.48 | 26 | 32.6 | 22.5 | 85.5 | NE, ENE | 6.4 | 4.5 | Ci.-S. | Cu. NE | 1.5 | ☇ Ω$^2$ a. d ⌒° Ф p. |
| 2 | 59.73 | 26.1 | 32.1 | 22.7 | 82.7 | N quad. | 6.7 | 7.7 | Ci.-S. E | S.-Cu. N | 3.8 | ⌒ ω p. |
| 3 | 59.53 | 25.6 | 29.6 | 23.1 | 85.5 | NE quad. | 5.6 | 9 | A.-Cu. | S.-Cu. NNE | 5.6 | ●° a. d° ω p. |
| 4 | 58.77 | 25.2 | 30.6 | 21.3 | 81.7 | N | 6.6 | 8 | Ci.-S. | S.-Cu., N quad. | .6 | d° a. p. ω p. |
| 5 | 57.07 | 25.2 | 30.2 | 20.4 | 79.3 | NW quad. | 6.3 | 8.5 | Ci.-S. | S.-Cu. NW by N | ------ | d° a. ω a. p. |
| 6 | 56.31 | 25.8 | 30.4 | 21.8 | 77.8 | WNW | 9.2 | 9.7 | Ci.-S. | S.-Cu. NW quad. | 2.8 | ω a. |
| 7 | 57.84 | 24.9 | 27.8 | 23.6 | 86.2 | W | 8.3 | 10 | Ci.-S. | Fr.-N. W | 3.1 | d° a. p. |
| 8 | 60.79 | 24.7 | 28.7 | 21.7 | 86.5 | Variable | 4.8 | 7.8 | A.-Cu. SW, W | S.-Cu. W | ------ | ω a. p. |
| 9 | 62.56 | 25.8 | 31.5 | 22.1 | 82.8 | N quad. | 6.6 | 3.3 | Ci.-S. | S.-cf. N | ------ | ≡° a. |
| 10 | 62.55 | 25.3 | 31.9 | 21.4 | 79 | NE, NNE | 7.5 | 1.2 | Ci. | Cu. NE, NNE | ------ | ≡° a. |
| 11 | 62.12 | 24.4 | 31.4 | 19.8 | 78 | N | 7.1 | 2.3 | Ci. | Cu. NNE | ------ |  |
| 12 | 61.51 | 24.6 | 30.7 | 18.7 | 83.2 | N | 6.3 | 2.7 | ------ | S.-Cu., Cu. NE | .5 | Ω$^2$ d° a. |
| 13 | 60.90 | 25.7 | 31.4 | 22.6 | 85.5 | NE | 7.7 | 8.3 | Ci.-S. | S.-Cu. ENE | 1.8 | d a. d° ☇ p. |
| 14 | 60.34 | 25.9 | 30.7 | 23.8 | 85.7 | NE | 9 | 5.3 | Ci.-S. | S.-Cu. NE | 4.1 | p° a. ☇ p. d° a. p. |
| 15 | 59.86 | 26 | 31.3 | 23.1 | 87.3 | NE | 6.4 | 7.2 | Ci.-S. | S.-Cu. ENE | 1.5 | d° a. p. T$^2$ ☇ p. |
| 16 | 59.55 | 26 | 31.7 | 23.5 | 86.2 | NE | 8.2 | 5.8 | Ci.-S. | S.-Cu. ENE, E | 3.3 | ☇ a. p. ● p. |
| 17 | 59.71 | 25.8 | 31.8 | 23 | 86.2 | NE | 7.7 | 7.8 | Ci.-S. SEbyS | S.-Cu. ENE, E | 9.9 | p° ☇ ●° p. |
| 18 | 59.50? | 26.1 | 31.8 | 23.2 | 85.3 | NE | 7.6 | 8.7 | A.-Cu. ENE | S.-Cu. NE | 8.7 | d ⊕ a. ●° p. |
| 19 | 59.49 | 25.7 | 30.3 | 22.9 | 88.3 | N | 5.8 | 4 | Ci.-S. | S.-Cu. ENE | 3.8 | ●° ☇ p. |
| 20 | 58.76 | 25.8 | 31.3 | 23.1 | 87 | Variable | 6.2 | 4.2 | A.-Cu. | S.-Cu. NE | ------ | d° a. p. |
| 21 | 57.97 | 25.8 | 30.6 | 22.8 | 88.7 | NE quad. | 5.8 | 4.5 | A.-Cu., Ci.-S. | S.-Cu. ENE | 2.1 | d° ☇ p. |
| 22 | 57.96 | 26.4 | 32.9 | 23.1 | 85.2 | Variable | 5.7 | 3.8 | Ci.-S. | Cu. NE | .8 | ≡° a. d° p. |
| 23 | 58.27 | 25.7 | 31.7 | 23.4 | 88.8 | NE | 5.5 | 4 | Ci.-S. | S.-Cu. NE | 16.3 | ≡° a. ● ⌈☇ T$^2$ p. |
| 24 | 58.89 | 25.4 | 30.5 | 22.5 | 89.3 | N | 6 | 3.7 | Ci. | S.-Cu. E | .8 | Ω p a. d° ⌒° ☇ p. |
| 25 | 60.09 | 25.7 | 29.9 | 23.4 | 88 | N | 7.5 | 6.5 | A.-Cu. | S.-Cu. NE | 1.8 |  |
| 26 | 60.49 | 26 | 32 | 22.9 | 83.5 | NNE | 7.8 | 4.5 | A.-Cu. | S.-Cu. NE | ------ | d. a. |
| 27 | 60.54 | 26.3 | 32.5 | 22.3 | 81.5 | ENE | 6.5 | 2 | Ci., A.-Cu. | Cu. NE | 2.3 | Ω a. |
| 28 | 60.62 | 26.3 | 31.7 | 23.6 | 87 | NE | 5.7 | 6.5 | A.-Cu. SE | S.-Cu. ENE | .8 | ●° d° T a. Ф° p. |
| 29 | 61.62 | 25.9 | 31.6 | 22.7 | 84.2 | NNE | 7.4 | 4.2 | Ci. SEbyE | S.-Cu. NE | 3.1 | d° a. Ф° p. |
| 30 | 60.26 | 24.6 | 30.7 | 22.5 | 91.8 | NNE | 4.9 | 8.2 | Ci.-S. | N., S.-Cu. NE | 3.3 | d a. p. Ф p. |
| Mean | 759.74 | 25.6 | 31.1 | 22.4 | 84.9 | ------ | 6.8 | 5.8 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 82.3 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### LEGASPI.

[$\phi$=13° 09′ N; $\lambda$=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km.p.h.* | *0–10.* |  |  | *mm.* |  |
| 1 | 759.85 | 28.1 | 32.8 | 25.2 | 76.2 | NNE | 16.5 | 2.7 | Ci. | Cu. NE | ------ | ↯° p. |
| 2 | 60.09 | 26.1 | 30.6 | 23.5 | 80.3 | NNE | 12.6 | 8 | Ci.-S. | Cu., Fr.-N. NE, N | 2.9 | d a. ● ⌒° p. |
| 3 | 60.03 | 26.5 | 32 | 22.6 | 80 | NNE | 16.5 | 9.7 | Ci.-S. | Cu.-N. NNE | 3.6 | d a. p. ● p. |
| 4 | 59.04 | 26.2 | 30 | 23.1 | 73.3 | NNE | 16.4 | 7.8 | Ci.-S. | Cu. N, NNE | ------ | ●° ○ a. ⍦ d° p. |
| 5 | 57.22 | 26.4 | 31 | 22.5 | 67.2 | N quad. | 12.4 | 8.3 | Ci.-S. E | Cu. N | ------ | ⊕ a. |
| 6 | 56.29 | 25.2 | 28.2 | 21.6 | 80.3 | W | 11.6 | 9.2 | Ci.-S. | Cu.-N. NNW | 5.3 | p° p. |
| 7 | 57.64 | 24.2 | 25 | 22.2 | 90.8 | W, WSW | 10.2 | 10 | Ci.-S. | Fr.-N. WNW, NW | 7.1 | ● a. p. |
| 8 | 60.78 | 25.4 | 30 | 20.4 | 79.3 | NE | 7.4 | 9.3 | Ci.-S. E | Cu. NNW, WNW | ------ | ≡° a. ●° p. |
| 9 | 62.82 | 26.3 | 30.7 | 23.9 | 78.8 | NE | 11.8 | 5.2 | Ci.-S. | Cu. NNE | ------ | ≡° a. |
| 10 | 62.88 | 26.8 | 32 | 23.4 | 74.8 | NNE, NE | 15.5 | 1.5 | Ci. | Cu. NE | ------ |  |
| 11 | 62.50 | 26.3 | 32.9 | 22.4 | 69.8 | NNE | ------ | 1 | ------ | Cu. NE | ------ | ≡° a. |
| 12 | 62.12 | 25.2 | 28.5 | 23 | 80.5 | NNE, NE | 14 | 3.2 | A.-Cu. ESE | Fr.-N. ENE | 7.4 | d° a. ● p. |
| 13 | 61.50 | 26.5 | 31 | 22 | 82 | NE | 17.8 | 6.7 | Ci.-S. | Cu. E | 5.6 | ● a. p p. |
| 14 | 61.15 | 27.3 | 31.6 | 24.4 | 76.8 | NE | 19.6 | 3.5 | A.-Cu. | Cu.-N., Cu. NE, ENE | ------ | ↯ d° p. |
| 15 | 60.50 | 26.5 | 30.9 | 23.5 | 85.7 | NE | 18.6 | 6.3 | Ci.-S. | Fr.-Cu. NE, ENE | 19.5 | d a. p. ● p. |
| 16 | 60.20 | 26.3 | 29.8 | 22 | 86.5 | NE quad. | 18.5 | 7.8 | Ci.-S. | Fr.-N. E, ENE | 12 | ● a. p. |
| 17 | 60.06 | 27.7 | 32 | 24.5 | 80 | NE | 17.1 | 6.2 | Ci.-S. | Cu.-N. NE, ENE | 3.3 | ●° a. d° p. |
| 18 | 60.36 | 26.5 | 30.7 | 23.2 | 85 | NE | 16 | 6.3 | A.-Cu. ESE | N. NE | 8.4 | ● a. |
| 19 | 60.01 | 27.2 | 31 | 24.1 | 81.2 | NE | 14.6 | 5.3 | Ci.-S. | Cu.-N. ENE | 14 | ↯° p. |
| 20 | 59.07 | 27.2 | 32.1 | 22.6 | 83.2 | NE | 13.2 | 5.3 | Ci., Ci.-S. | Cu.-N. ENE | 22 | ● a. ●° p. |
| 21 | 58.52 | 27.1 | 30.7 | 23.5 | 85.5 | NE | 14.9 | 4.3 | Ci. | Cu.-N., N. ENE, E | 30.7 | ●$^2$ a. ● p. |
| 22 | 58.38 | 27.7 | 32.6 | 24.4 | 79 | NE | 12.2 | 2 | Ci. | Cu. ENE | ------ | ↯° p. |
| 23 | 58.72 | 27.9 | 33.8 | 23.6 | 80.2 | NE | 8.5 | 2.5 | ------ | Cu. ENE | 1.8 | ↯° p. |
| 24 | 59.40 | 27.2 | 32.1 | 23.6 | 83.2 | NE | 9.6 | 5 | Ci.-S. | Cu.-N. ENE | 4.1 | d ● a. |
| 25 | 60.61 | 27 | 30.5 | 23.7 | 82.3 | NE | 12.4 | 8.7 | Ci.-S. | Fr.-N. ENE | 3 | d ● a. |
| 26 | 61.13 | 26.9 | 31.2 | 23.5 | 75.7 | NE | 15 | 2.8 | ------ | Cu. E, ENE |  | ↯° p. |
| 27 | 61.12 | 26.4 | 30.6 | 23.5 | 78.5 | NE | 12.6 | 2.5 | Ci. | Fr.-Cu., Cu.-N. ENE | 1 | ● a. d° p. |
| 28 | 61.06 | 26.6 | 31.5 | 20 | 78.8 | NNE | ------ | 4.2 | Ci. | Cu. NE | ------ | ≡° a. |
| 29 | 60.99 | 27.6 | 32.5 | 24.4 | 78.2 | NE | 13.1 | 3.3 | A.-Cu. | Cu. NE | 4.3 | d° a. ● p. |
| 30 | 60.89 | 25 | 26.4 | 22.5 | 86.3 | N, NE | 14 | 8 | Ci.-S. | Fr.-N., N. ENE, NE | 28.4 | ● a. p. |
| Mean | 760.16 | 26.6 | 30.8 | 23.1 | 80 | ------ | 14 | 5.6 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 184.4 |  |

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.74 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *Per ct.* |  | *Km. p. h.* | *0–10.* |  |  | *mm.* |  |
| 1 | 760.55 | 27.6 | 29.9 | 25 | 77.7 | NE | ------ | 6.2 | Ci. E | Cu. NE | 1.3 | ↯° ● a. Ф° ↯ p. |
| 2 | 60.86 | 27.5 | 29.2 | 25.3 | 72.5 | NE | ------ | 7.3 | Ci. E | Cu. NE | ------ | ◌° a. d Ф° p. |
| 3 | 60.80 | 27.4 | 28.5 | 25.5 | 74.2 | NE | 40.1 | 7.3 | Ci.-Cu. NE | S.-Cu. NE | 4.6 | ● a. ↙° Ф° p. |
| 4 | 60.19 | 26.6 | 28.5 | 24.7 | 70.7 | NE quad. | ------ | 6.8 | Ci. ESE | S.-Cu., Cu. NE | ------ | ↙° d° ◌$^2$ a. Ф° p. |
| 5 | 58.26 | 26 | 28.9 | 20.5 | 66.5 | N | ------ | 8.5 | Ci. ENE | S.-Cu. NE | ------ | ◌$^2$ a. d° Ф$^2$ ⍦$^2$ p. |
| 6 | 57.37 | 24.6 | 29.3 | 20 | 77.7 | SW | 12 | 9.5 | Ci.-S. E | S. | ------ | ◌$^2$ a. |
| 7 | 58.34 | 26.2 | 29.9 | 22.4 | 77.8 | N quad. | 11.3 | 9.8 | Ci.-S. E | S.-Cu. N | ------ | Ω$^2$ a. Ф$^2$ ⍦$^2$ p. |
| 8 | 60.93 | 26.9 | 29.4 | 25.4 | 72.8 | N | 15.7 | 9.3 | A.-Cu. W | S.-Cu. N, NW | ------ | ⍦$^2$ a. Ф° p. |
| 9 | 62.78 | 26.3 | 29.3 | 24 | 78.3 | NE, E | 18.2 | 9.2 | Ci.-Cu. N | S.-Cu. NE | 1.6 | Ω$^2$ d$^2$ a. |
| 10 | 63.17 | 25.9 | 27.9 | 24 | 73 | NE | 25.1 | 6.8 | Ci. | S.-Cu. NE | 3.8 | d$^2$ ●° a. |
| 11 | 62.53 | 26.6 | 29 | 24.4 | 67.2 | NE quad. | 23 | 2 | A.-Cu. NNE | Cu. NE | ------ | Ф$_\circ$ a. |
| 12 | 62.31 | 26.7 | 29.5 | 24.2 | 71 | NE | 23.1 | 1.5 | Ci. | Cu. NE | ------ |  |
| 13 | 62.07 | 26.6 | 29.1 | 25.2 | 77.2 | NE | 27.2 | 6.8 | A.-Cu. E | S.-Cu. NE | 1.3 | ● p. |
| 14 | 61.69 | 27 | 29.1 | 23.7 | 74.3 | NE | 35.2 | 5.3 | Ci.-Cu. ENE | S.-Cu. NE | ------ | d$^2$ ⌒$^2$ a. |
| 15 | 61.18 | 26.3 | 27.9 | 23.3 | 83.2 | NE | 29.7 | 7.7 | Ci. | S.-Cu. NE | 5.3 | d$^2$ a. p. ●° ↯ p. |
| 16 | 60.84 | 27 | 28.7 | 25.5 | 80.2 | NE | 34.5 | 6.7 | A.-Cu. E | S.-Cu. NE | 3 | ●° ↯° p. |
| 17 | 60.61 | 26.5 | 29.2 | 24.5 | 83.7 | NE | 32.5 | 7 | Ci. | S.-Cu. NE | 3.6 | ●° a. ↯° p. d° a. p. |
| 18 | 60.79 | 26.4 | 28.2 | 23.8 | 81.7 | NE | 31.1 | 7.2 | A.-Cu. E | S.-Cu. NE | 1.9 | ↙° a. ●° d$^2$ a. p. |
| 19 | 60.60 | 26.4 | 28.3 | 24.4 | 81.2 | NE | 31.2 | 9 | Ci., Ci.-Cu. | S.-Cu. NE | 7.9 | d° ●° a. d$^2$ ⌒° p. |
| 20 | 59.62 | 25.9 | 27.7 | 24.1 | 87.8 | NE | 24.8 | 7.7 | Ci.-Cu. | N., S.-Cu. NE | 14.2 | ●° a. p. d$^2$ a. ↯° p. |
| 21 | 58.84 | 26.2 | 27.5 | 24.2 | 85 | NE | 25.6 | 6.2 | A.-Cu. E | S.-Cu. NE | 3.8 | ●° ⌒ a. ↯° p. |
| 22 | 58.78 | 26.6 | 29.1 | 25.4 | 80.8 | NE, N | 21.6 | 3.3 | Ci. | S.-Cu. NE | ------ |  |
| 23 | 58.87 | 26.6 | 29.3 | 24.9 | 81.5 | NE | 13.4 | 6.3 | A.-Cu. NE | S.-Cu. NE | ------ | d a. |
| 24 | 59.64 | 26.6 | 28.7 | 25 | 82 | N quad. | 15.3 | 2.5 | Ci. | Cu. N | ------ |  |
| 25 | 60.74 | 27.2 | 29.3 | 25.4 | 76.2 | NE | 24.5 | 2.7 | Ci. | Cu. NE | ------ |  |
| 26 | 61.41 | 26.9 | 29.4 | 25 | 73.8 | NE | 22.1 | 1.5 | ------ | Cu. NE | ------ |  |
| 27 | 61.73 | 26.6 | 29.5 | 24.3 | 72.2 | NE | 17.7 | 1.3 | Ci. | Cu. NE | ------ | Ф° p. |
| 28 | 61.66 | 26.5 | 29.4 | 23 | 76.3 | N | 19 | 5.8 | Ci. | S.-Cu. NE | ------ | Ф° p. |
| 29 | 61.70 | 26.6 | 28.8 | 25.3 | 75.8 | NE, N | 27.3 | 2.5 | A.-Cu. NE | Cu. NE | ------ | Ф p. |
| 30 | 61.30 | 26.8 | 28.7 | 25.3 | 76.3 | NE | 32.8 | 7.5 | Ci. | S.-Cu. NE | ------ | Ф ⍦ d p. |
| Mean | 760.67 | 26.6 | 28.9 | 24.3 | 76.9 | ------ | 24.4 | 6 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 52.3 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0–10.* | | | *mm.* | |
| 1 | 760.79 | 27.6 | 30.8 | 25.5 | 78.8 | NE | 16.8 | 3.8 | Ci. | Cu. NE | ------ | |
| 2 | 60.98 | 27.1 | 30 | 23.8 | 76.3 | NNE | 15.7 | 7.8 | Ci. | Cu. NE | 3.3 | ● ψ p. |
| 3 | 60.97 | 26.6 | 28.7 | 24.9 | 82 | NE | 21.9 | 9.2 | Ci.-S. | S.-Cu. NNE | 7.8 | ● a. p. ψ p. |
| 4 | 60.35 | 26.5 | 29.8 | 24.8 | 68.8 | NNE | 18.2 | 7.8 | Ci.-S. | Cu. NNE | ------ | p° ○ a. |
| 5 | 58.15 | 26.4 | 28.7 | 24.4 | 70.3 | N quad. | 13.4 | 8.8 | Ci.-S. | Cu. N quad. | .8 | ●° a. p. d p. |
| 6 | 57.17 | 26.5 | 29.5 | 24.9 | 73.8 | NW quad. | 10.4 | 10 | Ci.-S. | Cu. NNW | 4.3 | d° a. p. ●° p. |
| 7 | 58.54 | 25.8 | 28.8 | 23.7 | 83.3 | NW duad. | 11.9 | 10 | Ci.-S. | Cu., S.-Cu. NNW | 12.9 | d ● a. ψ p. |
| 8 | 61.36 | 26.4 | 29.5 | 25.2 | 74.8 | NNW | 10.7 | 10 | Ci.-S. | Cu. N quad. | 1 | p° p. |
| 9 | 63.29 | 24.4 | 28.2 | 23 | 87.3 | W, SE | 7.8 | 10 | Ci.-S. | S.-Cu. NE | 16.4 | ● a. d° ●° a. p. |
| 10 | 63.52 | 25.8 | 29.3 | 23.8 | 74.3 | ENE | 16.6 | 8.7 | Ci.-S. | Cu. NE | 1.3 | ● a. |
| 11 | 62.96 | 25.7 | 29.8 | 23.4 | 71.7 | ENE | 13.5 | 4 | Ci. | Cu. ENE | ------ | p° p. |
| 12 | 62.56 | 26.2 | 30.3 | 23.6 | 75.7 | NE | 14.3 | 5.7 | Ci. | Cu. E quad. | 3.8 | p° a. ● p. |
| 13 | 62.34 | 26.5 | 30.1 | 24.3 | 79 | ENE | 19.4 | 6.2 | Ci.-S., Ci. | Cu. ENE | 1.3 | d° p. |
| 14 | 62.18 | 26.8 | 30.3 | 24.4 | 76.7 | ENE, NE | 21.3 | 3.3 | Ci. | Cu. ENE | ------ | ●° a. |
| 15 | 61.14 | 27 | 30 | 23.9 | 84.8 | NE | 19.7 | 8.8 | Ci.-S. | Cu., S.-Cu. ENE | 11.8 | d a. ● a. p. |
| 16 | 61.18 | 27.2 | 30 | 25.4 | 81.3 | ENE | 24 | 7.2 | Ci.-S., Ci. | Cu. ENE | .5 | ● a. |
| 17 | 60.79 | 26.7 | 29.5 | 23.6 | 86.3 | NE | 21.2 | 8.5 | Ci.-S. | Cu. ENE | 11.2 | ● a. p. |
| 18 | 61.14 | 26.7 | 29.8 | 23.9 | 84 | NE | 20.4 | 7 | Ci. | Cu. ENE | 4.5 | ⌒ a. ● a. p. |
| 19 | 60.79 | 26.4 | 29.8 | 24.8 | 87 | NE | 19.2 | 9.2 | Ci.-S. | Cu. ENE | 13.2 | ● p° a. p. |
| 20 | 59.86 | 27 | 30.3 | 24.2 | 85.2 | NE | 17.6 | 6.5 | Ci. | S.-cu., cu. NE, ENE | 3 | ● a. p° p. |
| 21 | 59.12 | 26.5 | 29.4 | 24.8 | 88 | ENE | 17.8 | 8.3 | Ci.-S. | Cu. ENE | 8.7 | ● a. |
| 22 | 59 | 27 | 30.8 | 24.8 | 82.7 | NE | 11.8 | 5.5 | Ci. | Cu. ENE | 1.6 | Ω ⊕ a. d° ●° p. |
| 23 | 59.13 | 25.8 | 30.2 | 23.6 | 90.2 | E | 5.1 | 7 | Ci. | Cu. ENE | 3.5 | ● a. ●° p. |
| 24 | 59.98 | 26.1 | 30.8 | 22 | 85.2 | E | 7.6 | 4.2 | Ci. | Cu. E | ------ | Ω$^{2}$ ≡ a. |
| 25 | 61.16 | 26.8 | 30.8 | 25 | 81.2 | E | 12.5 | 5.3 | Ci. | Cu. ENE | ------ | |
| 26 | 61.82 | 26.5 | 30.5 | 24.5 | 75.3 | E | 12.7 | 2.5 | Ci. | Cu. ENE | ------ | |
| 27 | 61.93 | 26.2 | 30.3 | 21.9 | 76 | E | 9.5 | 5.2 | Ci. | Cu. ENE | ------ | Ω° a. |
| 28 | 61.88 | 25.8 | 30.6 | 21.1 | 82 | NE | 7.4 | 6.3 | Ci. | Cu. ENE | ------ | Ω ≡ d° a. |
| 29 | 61.94 | 26.8 | 30.5 | 25.4 | 77.8 | NE | 14.7 | 8 | Ci., Ci.-S. | Cu. NE | ------ | |
| 30 | 61.62 | 27.1 | 30.5 | 24.9 | 78 | NE | 19.8 | 6.8 | Ci. | Cu. NE | 1.3 | d° a. p. |
| Mean | 760.92 | 26.5 | 29.9 | 24.1 | 79.9 | ------------ | 15.1 | 7.1 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 112.2 | |

### SAN ISIDRO.

.[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0–12.* | *0–10.* | | | *mm.* | |
| 1 | 760.73 | 27 | 33.8 | 22.4 | 77.3 | NE quad. | 1.7 | 4.5 | A.-Cu. E | S.-Cu. NE | ------ | ≡° a. ⊤ p. Ω a. p. |
| 2 | 61.12 | 26.1 | 32.5 | 21.4 | 78 | NE | 2 | 4.5 | Ci. ESE | Cu. ENE, NE | ------ | Ω$^{2}$ ≡° a. ϟ Ω p. |
| 3 | 60.92 | 25.9 | 33.1 | 21 | 78.2 | NE quad. | 1.7 | 4.8 | Ci. | Cu. NE | ------ | Ω a. ⌽° p. |
| 4 | 60.16 | 25.8 | 32 | 21 | 73.3 | NE quad. | 2.2 | 6.3 | Ci. ESE | Cu. NE | ------ | |
| 5 | 58.62 | 25.2 | 31.6 | 19.8 | 71.3 | NE | 2.2 | 5.7 | Ci. ESE | Cu. N, NE | ------ | Ω a. ⌽$^{2}$ ψ$^{2}$ p. |
| 6 | 57.89 | 24.5 | 31 | 18.5 | 76.7 | NW quad. | 1.8 | 7.2 | Ci. E | Cu. NNW | ------ | Ω ○ a. ○$^{2}$ ψ° p. |
| 7 | 58.68 | 25.4 | 31.2 | 21 | 78 | NE, WNW | 1.8 | 8 | Ci.-S. ENE | Cu. NW | ------ | Ω ≡° ○ a. ψ$^{2}$ p. |
| 8 | 60.83 | 25.5 | 32.5 | 20.4 | 78.2 | NE | 1.3 | 6.2 | Ci. E | Cu. NE | ------ | ψ$^{2}$ a. Ω ○° a. p. |
| 9 | 62.54 | 25.9 | 33.2 | 20.6 | 77.7 | SE, NE | 1.7 | 4.8 | Ci. | Cu. E | ------ | Ω a. d° p. |
| 10 | 63.08 | 24.9 | 31.8 | 21.1 | 77 | NE | 2 | 5 | A.-Cu. SE | Cu. E | ------ | Ω a. p. |
| 11 | 62.89 | 23.8 | 30.4 | 19 | 73.8 | E quad. | 2.2 | 4.7 | A.-Cu. ESE | Cu. NE, E | ------ | Ω a. p. |
| 12 | 62.40 | 24.2 | 31.4 | 18.4 | 75 | E quad. | 2.2 | 3.8 | Ci. | Cu., Fr.-Cu. E | ------ | Ω a. p. |
| 13 | 62.41 | 24.4 | 32 | 19.4 | 77.2 | E | 2 | 5.3 | A.-Cu. ESE | Cu. E | ------ | Ω p. |
| 14 | 62.01 | 24.6 | 31.7 | 19.5 | 77.5 | NE | 1.7 | 5.2 | A.-Cu. ESE | Cu. E | ------ | Ω a. p. |
| 15 | 61.47 | 25 | 32.4 | 18.5 | 77 | NE | 1.3 | 4.8 | A.-Cu. ESE | Fr.-Cu., Cu. E | ------ | Ω a. p. ⌒ p. |
| 16 | 61.21 | 25.8 | 32.7 | 21.4 | 75 | NE | 2.7 | 3.2 | A.-Cu. E | Cu. E | ------ | Ω a. p. |
| 17 | 61 | 26 | 32.3 | 20.4 | 73.8 | NE | 2 | 5.2 | A.-Cu. ESE | Fr.-Cu. E | ------ | Ω a. p. |
| 18 | 60.86 | 26.3 | 33 | 21.3 | 72.2 | NE | 2.2 | 4.2 | Ci. | Fr.-Cu. E | ------ | Ω a. |
| 19 | 60.87 | 25 | 33.7 | 19.2 | 76.7 | NE | 1.8 | 4 | A.-Cu. E | N., Cu. NE, E | ------ | Ω a. p. |
| 20 | 59.93 | 24.9 | 33 | 19 | 78.3 | NE quad. | 1.8 | 4.2 | A.-Cu. | Cu. E, NE | ------ | ∞ a. Ω a. p. |
| 21 | 58.94 | 25.6 | 33.4 | 20.6 | 76.8 | NE quad. | 1.8 | 3.8 | Ci. | Cu. E | ------ | Ω a. p. |
| 22 | 58.99 | 25.7 | 33.3 | 19.5 | 75.8 | NE | 2 | 2.3 | Ci. | Cu. E | ------ | Ω a. |
| 23 | 58.86 | 25.9 | 33.5 | 19 | 77 | E quad. | 1.2 | 3 | Ci. | Cu. E | ------ | Ω$^{2}$ ≡° a. Ω p. |
| 24 | 59.77 | 25.8 | 34 | 19.5 | 76.3 | E quad. | 1.5 | 2.8 | A.-Cu., Ci. | Cu. E | ------ | Ω$^{2}$ ≡ a. Ω p. |
| 25 | 60.80 | 25 | 32.4 | 19.4 | 78.5 | NE | 2.3 | 3 | A.-Cu., Ci. | Cu. NE | ------ | Ω$^{2}$ ≡° a. Ω p. |
| 26 | 61.33 | 24.9 | 32.6 | 19.5 | 78.5 | NE | 2.5 | 3.2 | A.-Cu. NE | Cu. E, NE | ------ | Ω$^{2}$ a. Ω p. |
| 27 | 61.62 | 24.4 | 32.7 | 18.6 | 78.8 | NE | 2 | 2.3 | A.-Cu., Ci. | Cu. E | ------ | Ω ≡° a. |
| 28 | 61.64 | 24.4 | 32.7 | 17.4 | 75.7 | NE | 1.5 | 3 | Ci. | Cu. E | ------ | Ω$^{2}$ ≡ a. Ω p. |
| 29 | 61.82 | 24.2 | 32 | 17.1 | 73.5 | NE | 1.7 | 2 | Ci. | Cu. E | ------ | ≡° a. Ω a. p. |
| 30 | 61.66 | 24.1 | 32.7 | 17 | 73.7 | NE, ESE | 2 | 2.8 | A.-Cu., Ci. | Fr.-Cu., Cu. E | ------ | Ω$^{2}$ ≡° a. Ω p. |
| Mean | 760.84 | 25.2 | 32.5 | 19.7 | 76.2 | ------------ | 1.9 | 4.3 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | ------ | |

## METEOROLOGICAL DATA, ETC.—Continued.

### DAGUPAN.

[φ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean.) | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *Km. p. h.* | *0-10.* | | | *mm.* | |
| 1 | 760.30 | 27.6 | 32.7 | 22.8 | 82 | Variable | 8 | 4.7 | Ci. | Cu., S.-Cu. | ------ | |
| 2 | 60.50 | 27.9 | 34.3 | 23 | 76.7 | SE | 9.4 | 3.3 | Ci. | Cu., S.-Cu. | ------ | |
| 3 | 60.46 | 27 | 32.9 | 22.1 | 80.7 | Variable | 7.6 | 3.3 | Ci. | S.-Cu. | ------ | |
| 4 | 59.58 | 26.6 | 32.7 | 22 | 75.3 | SE quad. | 9.8 | 4.5 | Ci. | S.-Cu. N | ------ | |
| 5 | 58.34 | 25.8 | 31 | 20.8 | 76.8 | SE quad. | 9.7 | 3.3 | Ci. | S.-Cu. | ------ | ψ Φ p. |
| 6 | 57.63 | 25.4 | 30 | 20.2 | 81.7 | NW | 7.6 | 7.3 | Ci., Ci.-S. SE, ESE | Cu., S.-Cu. | ------ | Ω² ○° a. ψ Φ p. |
| 7 | 58.23 | 25.2 | 29.5 | 21.1 | 86.2 | NW quad. | 8.9 | 7.8 | Ci.-S. | S.-Cu. | ------ | ψ² Ω ○ a. ψ² p. |
| 8 | 60.40 | 25.6 | 32.4 | 21.4 | 86.5 | N quad. | 8.2 | 7.5 | Ci.-S. | S.-Cu. SW | ------ | ≡ a. |
| 9 | 62.22 | 26 | 32.3 | 22.4 | 86 | NW | 8.8 | 6.5 | Ci. | S.-Cu. SSW | ------ | |
| 10 | 62.47 | 25.6 | 32.5 | 21 | 81.2 | E, S | 7.8 | 3 | Ci. | S.-Cu. | ------ | Φ° p. |
| 11 | 62.04 | 25.3 | 33.2 | 20.6 | 75.3 | SE quad. | 11.7 | 1.7 | Ci. | Fr.-Cu. SE | ------ | |
| 12 | 61.93 | 24.5 | 31.4 | 18.9 | 79 | SE quad. | 8.5 | 1.5 | ------ | Fr.-Cu. SE | ------ | |
| 13 | 61.67 | 25 | 32.7 | 19.8 | 81 | SE | 9 | 1.3 | ------ | S.-Cu. | ------ | |
| 14 | 61.25 | 25.6 | 33.8 | 20.2 | 80.2 | SE, S | 10.2 | .8 | ------ | Cu. | ------ | |
| 15 | 60.88 | 26 | 34.3 | 19.9 | 77.2 | SE | 9 | .7 | ------ | Cu. | ------ | |
| 16 | 60.32 | 27.1 | 34.8 | 21.9 | 79.5 | SE | 10.4 | .7 | ------ | Cu. | ------ | |
| 17 | 60.25 | 26.1 | 32.9 | 20.8 | 79 | SE quad. | 10.5 | .8 | ------ | Cu. | ------ | |
| 18 | 60.22 | 26.8 | 34.4 | 21.6 | 79.5 | SE quad. | 8.1 | 1 | ------ | Cu. | ------ | |
| 19 | 60.22 | 26.3 | 33.6 | 21.1 | 78.2 | SE, N | 8.1 | 1 | ------ | Cu. | ------ | |
| 20 | 59.38 | 25.8 | 32.7 | 20.4 | 81.3 | S quad. | 8.5 | 1.3 | Ci. | Cu. | ------ | |
| 21 | 58.40 | 26.5 | 33.8 | 21.6 | 80.8 | SE quad. | 9.1 | 1.5 | Ci. | Cu., S.-Cu. | ------ | |
| 22 | 58.52 | 26.4 | 33.3 | 20.7 | 81.5 | SE quad. | 9.4 | 1.2 | ------ | Cu., S.-Cu. | ------ | |
| 23 | 58.55 | 26.2 | 31.1 | 21.4 | 86.2 | SE, NW | 10.1 | 1.2 | ------ | S.-Cu. | ------ | |
| 24 | 59.51 | 26.5 | 32.4 | 22.4 | 85.3 | NW | 12.3 | 2.8 | ------ | S.-Cu. S | ------ | |
| 25 | 60.32 | 25.9 | 32.4 | 21.4 | 87 | Variable | 7.2 | 1 | ------ | S.-Cu. | ------ | ≡ a. |
| 26 | 60.74 | 26.5 | 34.6 | 20.6 | 81.3 | SE | 9.8 | 2 | ------ | Cu. SE | ------ | |
| 27 | 61.11 | 26.2 | 32.9 | 20.8 | 82.5 | SE | 7.2 | 1.2 | ------ | Cu. | ------ | |
| 28 | 61.33 | 26.1 | 30.6 | 21.1 | 86.5 | NW | 9.9 | 4.2 | Ci. | S.-Cu. | ------ | |
| 29 | 61.30 | 26.3 | 33.6 | 20.5 | 82.3 | SE quad. | 7 | 1 | Ci. | Cu., S.-Cu. | ------ | ≡ a. |
| 30 | 61.10 | 25.2 | 32.8 | 19.5 | 84.2 | SE quad. | 8.1 | .3 | ------ | Cu., S.-Cu. | ------ | ≡ a. |
| Mean | 760.31 | 26.1 | 32.7 | 21.1 | 81.4 | ------ | 9 | 2.6 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### BOLINAO.

[φ=16° 24′ N; λ=119° 53′ E; barometer above sea, 9.7 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *Per ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 2 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 3 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 4 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 5 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 7 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 8 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |
| 9 | 762.20 | 26.4 | 31 | 24 | 70.7 | N quad. | 3.7 | 8.7 | Ci.-S. | Cu. | ------ | |
| 10 | 62.32 | 24.9 | 30.6 | 20.4 | 75.8 | NNW | 2.3 | 9.5 | Ci.-S. | Cu. SE | ------ | Ω a. |
| 11 | 61.83 | 25.4 | 30.4 | 20.5 | 67.7 | SE quad. | 3.7 | 5.2 | Ci. | S.-Cu. | ------ | Ω° a. d° p. |
| 12 | 61.58 | 24.9 | 31 | 20.3 | 70.8 | SE quad. | 2.2 | 1.5 | Ci. | S.-Cu. | ------ | Ω° a. |
| 13 | 61.45 | 25.5 | 31.7 | 20.8 | 72.8 | SE quad. | 2.3 | 1.2 | Ci., Ci.-S. | S.-Cu. | ------ | Ω a. |
| 14 | 61 | 25.9 | 32 | 19.9 | 72.1 | SE quad. | 2.5 | 1 | Ci. | Cu., S.-Cu. | ------ | Ω° a. |
| 15 | 60.62 | 26.4 | 31.9 | 22.1 | 71.6 | SE quad. | 2.8 | 1 | Ci. | S.-Cu. | ------ | Ω° a. |
| 16 | 60.13 | 26.7 | 32 | 21.6 | 81 | Variable | 1.7 | 1.2 | Ci. | S.-Cu. | ------ | Ω a. |
| 17 | 60.11 | 26.3 | 31.2 | 21.6 | 77.5 | SE quad. | 2.8 | 1.2 | Ci. | S.-Cu. | ------ | Ω° a. |
| 18 | 60.07 | 26.6 | 31.7 | 21.6 | 80.8 | N quad. | 2 | 1.3 | Variable | S.-Cu., Cu. | ------ | Ω a. |
| 19 | 60.06 | 26.6 | 31.4 | 22.4 | 75.3 | SSE, NNE | 2.7 | 1.2 | Ci. | S.-Cu. | ------ | Ω° a. |
| 20 | 59.13 | 26.4 | 32.5 | 22.9 | 74.1 | SE, N | 2.7 | 1.7 | Ci., Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 21 | 58.27 | 26.2 | 31.4 | 21.4 | 80.3 | Variable | 2.7 | 4.8 | Ci.-S. | S.-Cu. | ------ | Ω a. |
| 22 | 58.35 | 27.1 | 31.6 | 22.6 | 75.8 | SE, NNE | 2.5 | 2.3 | Ci. | S.-Cu. | ------ | Ω° a. |
| 23 | 58.52 | 27.3 | 31.1 | 23.1 | 80.8 | N quad. | 3 | 8 | Ci. | Fr.-Cu. N | ------ | |
| 24 | 59.58 | 26.8 | 30.1 | 25.9 | 79.5 | NE quad. | 3.7 | 8 | Ci.-S. | Cu. NE, N | .8 | p° a. |
| 25 | 60.27 | 27.1 | 30.5 | 22.6 | 77.7 | NNE | 3 | 3.3 | Ci. | Variable | ------ | |
| 26 | 60.62 | 26.3 | 32 | 21.9 | 77.7 | SE quad. | 2.3 | 2.7 | Ci. | S.-Cu., Cu. | ------ | Ω a. |
| 27 | 60.97 | 25.6 | 32.6 | 19.6 | 80.3 | S | 1.8 | 2.8 | Ci. | S.-Cu. | 2 | Ω ≡° a. |
| 28 | 61.19 | 27.4 | 31 | 23 | 81 | N quad. | 2.8 | 7.3 | Ci.-S. | Fr.-Cu. NNE | ------ | ●° a. |
| 29 | 61.12 | 27.3 | 32 | 23 | 78.2 | Variable | 2.5 | 5.7 | Ci.-S. | S.-Cu. | ------ | Ω° a. |
| 30 | 60.88 | 26.4 | 32.1 | 22.4 | 79.3 | SE quad. | 2.8 | 4 | Ci. | S.-Cu. | ------ | Ω° a. |
| Mean | 760.47 | 26.3 | 31.4 | 22 | 76.4 | ------ | 2.7 | 3.8 | ------ | ------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

## METEOROLOGICAL DATA, ETC.—Continued.

### BAGUIO.[1]

[φ=16° 25′ N; λ=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| Day | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | Clouds. Prevailing form and its direction. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | Km. p. h. | 0-10. | | | mm. | |
| 1 | 637.97 | 18.2 | 23.9 | 15.1 | 89.5 | Variable | 10.6 | 7.7 | Ci. | S.-cf. NW | 16.8 | Ω² a. ● ≡ d p. |
| 2 | 37.97 | 17.6 | 23 | 14.8 | 93.3 | W | 11 | 7.9 | Ci. | Fr.-Cu. N, ENE | | Ω² a. ≡² p. |
| 3 | 37.84 | 17.2 | 23.2 | 14.1 | 91.8 | W | 10.5 | 6.4 | Ci. | Cu. | | Ω² a. ≡ p. |
| 4 | 36.85 | 16.7 | 21.8 | 13.8 | 91.2 | Variable | 10.6 | 8.9 | Ci. | S.-Cu. NE | | ≡ a. d p. |
| 5 | 35.50 | 15.3 | 21.2 | 12.6 | 87 | Variable | 8.4 | 8 | Ci. | S.-Cu. SE | | Ω a. ≡ a. p. |
| 6 | 35.10 | 16.7 | 21.9 | 12 | 80.3 | Variable | 7.6 | 8.9 | Ci.-S. SE | Cu. | | Ω a. ≡ Ψ² p. ○² |
| 7 | 35.77 | 17 | 22.2 | 14 | 86.2 | W quad. | 10.2 | 10 | Ci.-S. | S.-Cu. NEbyN | | Ω ○ ⊕° a. ≡ Ψ p. |
| 8 | 37.43 | 16.6 | 21.8 | 14.1 | 88.8 | Variable | 11 | 9.3 | Ci.-S. | S.-Cu. SWbyW | | Ω a. |
| 9 | 38.85 | 15.8 | 22.1 | 13.6 | 91.8 | SE, WSW | 11 | 7.7 | Ci. SW | S.-Cu. SW | | Ω² a. ≡ d p. |
| 10 | 38.88 | 15.6 | 22 | 12.4 | 87.8 | WSW, SE | 12.7 | 3.7 | Ci. | Cu. | | Ω² a. |
| 11 | 38.34 | 14.5 | 21.2 | 10.9 | 80 | E quad. | 15.3 | 4.3 | Ci. | S.-Cu. | | Ω a. |
| 12 | 38.19 | 15.6 | 22.1 | 11.7 | 69.7 | E | 24.3 | 1.4 | | Cu. | | |
| 13 | 38.38 | 16.7 | 23.4 | 12.6 | 75.7 | E | 24.8 | 1.3 | | S.-cf. ESE | | |
| 14 | 38.30 | 17.2 | 24.2 | 13.5 | 74 | SE quad. | 19.1 | 1.7 | | Cu. | | ≡ p. |
| 15 | 38.14 | 18.6 | 23.8 | 14.6 | 58.7 | E | 23 | .1 | | Cu. | | |
| 16 | 37.94 | 18.2 | 22.8 | 15.3 | 69.7 | ESE | 30.7 | .7 | Ci.-Cu. | Cu. | | ↙° a. |
| 17 | 38 | 18.6 | 24.6 | 15 | 61.8 | E quad. | 14.9 | .7 | | Cu. | | |
| 18 | 37.94 | 18 | 24.3 | 14.4 | 73.5 | E quad. | 16.2 | 1.3 | | Cu. | | Ω° a. |
| 19 | 37.78 | 18.4 | 25 | 14.4 | 70.2 | E | 12.8 | 2.3 | | S.-cf. ESE | | ≡ p. |
| 20 | 36.93 | 18.3 | 24.2 | 14.6 | 71.5 | SE quad. | 12.1 | 4.9 | | S.-Cu. ESE | | ≡° |
| 21 | 36.26 | 18.1 | 23.8 | 14.8 | 80.7 | E quad. | 15.9 | 5.4 | Ci. | S.-Cu. E | | |
| 22 | 36.22 | 17.7 | 24.3 | 14.4 | 81.8 | SW quad. | 10.8 | 4.1 | Ci. | Cu. | | ≡ p. |
| 23 | 36.21 | 18 | 23.9 | 14 | 85.3 | Variable | 10.6 | 3.4 | Ci. | Cu. | | Ω a. |
| 24 | 36.84 | 17.4 | 23.2 | 13.1 | 88 | E quad. | 10.3 | 5.6 | | Cu. | | Ω² a. ≡ a. p. |
| 25 | 37.62 | 17.7 | 23.8 | 13.9 | 85.2 | Variable | 10.8 | 4.1 | Ci. | S.-cf. WNW | | Ω² a. ≡° p. |
| 26 | 38.03 | 17.5 | 23.4 | 14 | 77.8 | E, WSW | 10.4 | 4.1 | Ci. | Cu. | | ∞ a. ≡ p. |
| 27 | 38.28 | 17.4 | 23.8 | 13.9 | 83.5 | Variable | 10.4 | 3.6 | Ci. | Cu. | | Ω° a. ≡° p. |
| 28 | 38.39 | 17.8 | 23.7 | 13.6 | 87.2 | W, NE | 11.5 | 7.3 | Ci. | Cu. | | Ω² a. ≡ p. |
| 29 | 38.34 | 17.8 | 23 | 15 | 77.5 | SE, WSW | 12.2 | 6.1 | Ci. | Cu. | | ≡ d° p. |
| 30 | 38.16 | 18.5 | 23.8 | 15 | 67.7 | SE quad. | 12.4 | 2.1 | Ci. | Cu. | | |
| Mean | 637.55 | 17.3 | 23.2 | 13.8 | 80.2 | | 13.7 | 4.8 | | | | |
| Total | | | | | | | | | | | 16.8 | |

### VIGAN.

[φ=17° 34′ N; λ=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Upper. | Clouds. Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 760.22 | 27.3 | 32.7 | 23.3 | 83.8 | Variable | 0.8 | 2.7 | Ci.-S. | Cu. NW | | |
| 2 | 60.57 | 27.8 | 33.1 | 22.2 | 62.8 | NE quad. | 1.5 | 3 | A.-Cu. E | S.-Cu. ENE | | Ω° a. Φ p. |
| 3 | 60.58 | 26.6 | 31.8 | 22.8 | 72.3 | NE | 1.2 | .5 | Ci. | Cu. ENE | | Ω a. |
| 4 | 59.86 | 26 | 31.4 | 22.2 | 64.7 | NE | 1 | .5 | Ci. | Fr.-Cu. NW | | Ω° a. |
| 5 | 58.75 | 24.1 | 30.3 | 19.6 | 72.5 | N quad. | 1.7 | 2.5 | Ci. SE | Cu. ESE | | Ω° a. Ψ² p. |
| 6 | 58.48 | 24.3 | 29.5 | 19.8 | 75.5 | NNE | 2.5 | 7.2 | Ci. SE | Cu. NE | | ⊕ ○ a. Ψ a. p. ↙° p. |
| 7 | 59.30 | 23.9 | 27.7 | 20.8 | 78.8 | NNE | 3.3 | 9 | Ci. ESE | Cu. NE | | Φ ⊕ a. p. Ψ p. |
| 8 | 60.93 | 23.6 | 28.6 | 19.8 | 80.3 | N quad. | 1.7 | 9 | A.-Cu. S | Cu. SE | | Ψ a. Φ a. p. |
| 9 | 62.49 | 23.9 | 30.2 | 19.8 | 79.8 | N quad. | .5 | 4.5 | Ci.-S. | Cu. SSW | | Ψ a. |
| 10 | 62.68 | 24.2 | 29.7 | 18.2 | 75 | Variable | .5 | 1 | Ci. | S.-Cu. | | Ω° ≡° a. |
| 11 | 62.18 | 25.3 | 31.4 | 20.3 | 63.3 | E quad. | .8 | .5 | Ci.-S. | Cu. | | |
| 12 | 61.82 | 24.6 | 30.7 | 19.8 | 77.7 | NW, WNW | .3 | .7 | | S.-Cu. | | Ω° a. |
| 13 | 61.68 | 25.8 | 32.3 | 19.6 | 74.8 | ESE | .2 | 0 | | Cu. | | ≡° Ω a. |
| 14 | 61.24 | 25.6 | 32.3 | 21.4 | 81 | NW | .5 | .3 | | Cu. | | Ω a. |
| 15 | 60.93 | 25.4 | 31.3 | 21.2 | 85 | E quad. | .5 | 1 | | Cu. NW | | Ω a. |
| 16 | 60.32 | 26.4 | 32 | 21.5 | 86.8 | Variable | .5 | .2 | | Cu. | | Ω ≡° a. |
| 17 | 60.33 | 27.1 | 33.2 | 22.1 | 85 | Variable | 1 | .2 | | S.-Cu. | | Ω° a. |
| 18 | 60.15 | 27.4 | 35.2 | 22.4 | 81.2 | Variable | .8 | .8 | Ci.-S. | Fr.-Cu. SE | | Ω ≡° a. |
| 19 | 60.22 | 27.6 | 33 | 22.4 | 78.3 | Variable | .7 | 0 | | Fr.-Cu. | | Ω a. |
| 20 | 59.28 | 27.9 | 31.8 | 23.4 | 72 | NW quad. | 1.3 | .2 | Ci.-S. | Fr.-Cu. | | Ω a. |
| 21 | 58.46 | 26.4 | 31.2 | 22.5 | 88.8 | NW | .7 | 2.2 | Ci. | Cu. NNE | | Ω° ≡° a. |
| 22 | 58.50 | 26.6 | 31.2 | 22.7 | 86.3 | Variable | .7 | .8 | Ci. | S.-Cu. NNE | | Ω° a. |
| 23 | 58.64 | 25.6 | 31.3 | 21.8 | 89 | N quad. | 1 | 1.8 | Ci.-S. | Cu. NNW | | Ω² ≡° a. |
| 24 | 59.85 | 24.8 | 29.3 | 22 | 89 | NNW | 1.7 | 4.7 | A.-Cu. E | S.-Cu. NNW | | |
| 25 | 60.50 | 25.3 | 31.2 | 19.8 | 83.7 | Variable | 1.2 | .2 | Ci.-S. | Fr.-Cu. NNE | | Ω ≡° a. |
| 26 | 60.82 | 26.2 | 32.3 | 22.2 | 83.2 | SE quad. | 1.2 | .3 | Ci. | Fr.-Cu. NE | | Ω a. |
| 27 | 61.10 | 25.9 | 31.4 | 21.3 | 87.3 | NE quad. | .7 | .7 | Ci.-S. | S.-Cu. NNE | | Ω a. |
| 28 | 61.40 | 26 | 32 | 22.2 | 85.2 | N quad. | 1.2 | 1.2 | Ci. | Cu. NNE | | Ω° a. |
| 29 | 61.32 | 26.1 | 31.3 | 21.8 | 86.2 | E quad. | .8 | 3.2 | Ci. | Cu. NNW | | |
| 30 | 60.97 | 25.8 | 30.7 | 21.3 | 84.5 | Variable | .5 | 1.8 | Ci. | Cu. NE, WNW | | |
| Mean | 760.45 | 25.8 | 31.3 | 21.3 | 79.8 | | 1 | 2 | | | | |
| Total | | | | | | | | | | | | |

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[1] The barometric readings of this station are not reduced to sea level

## METEOROLOGICAL DATA, ETC.—Continued.

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | mm. | °C. | °C. | °C. | Per ct. | | 0-12. | 0-10. | | | mm. | |
| 1 | 761.26 | 25.8 | 33 | 21 | 81 | NW | 1.2 | 2 | ---- | Cu. SSW | ---- | Ω² ≡° a. |
| 2 | 62.27 | 24.3 | 31.4 | 19.5 | 87 | NE, NW | 1.8 | 5.2 | Ci. | Cu.-N. N | ---- | d° a. |
| 3 | 62.83 | 24.6 | 30.4 | 20.2 | 80.3 | NW | 2.3 | 5.7 | ---- | S.-Cu. N | ---- | |
| 4 | 61.68 | 23.4 | 30 | 20 | 81.2 | NW | 1.3 | 5.2 | Ci. | Cu. N | ---- | |
| 5 | 59.52 | 22.8 | 30.3 | 17.7 | 82.7 | NW | 1.2 | 6.8 | Ci. | S.-Cu., Cu.-N. N | ---- | ψ² p. |
| 6 | 59.16 | 22.4 | 28.4 | 20.4 | 93.8 | NW | 2.2 | 10 | ---- | N. N | 7.4 | d ● a.p p. |
| 7 | 60.19 | 22 | 25.4 | 20 | 92 | NW | 2.2 | 8.2 | ---- | S.-Cu. NE | 4.1 | |
| 8 | 62.12 | 22.4 | 27.7 | 19.9 | 87.3 | NW quad. | 2.2 | 7.3 | Ci. | N. N | ---- | p a. |
| 9 | 63.83 | 22.4 | 29.3 | 18.2 | 80.5 | NW | 1 | 7.2 | ---- | Cu. NW | ---- | |
| 10 | 64.26 | 22.1 | 30.4 | 16.8 | 80.5 | NW | .2 | 3.7 | ---- | Fr.-Cu. N | ---- | |
| 11 | 63.83 | 22.2 | 29.4 | 16.2 | 81.3 | SW, NW | .3 | 5.2 | ---- | S.-Cu. E | ---- | Ω° a. |
| 12 | 63.60 | 23.7 | 29.7 | 19 | 81.3 | SE | .2 | 7.7 | A.-Cu. ESE | Cu. S, SE | ---- | Ω² a. |
| 13 | 63.78 | 23.7 | 31.5 | 18.5 | 82.7 | S | .2 | 3.8 | ---- | Cu. SW, E | ---- | Ω² ≡ a. |
| 14 | 63.22 | 24.3 | 33.7 | 19.5 | 81.3 | SE | .2 | 4.5 | ---- | Cu. E | ---- | Ω° a. |
| 15 | 62.90 | 24.2 | 32.2 | 17.5 | 83.5 | NW | .3 | 2.8 | ---- | Cu.-N.,S.-Cu.ENE,Sw | ---- | Ω² ≡ a. |
| 16 | 62.34 | 25.7 | 33 | 21 | 79.7 | SW | .2 | 5.3 | ---- | Cu. SE | ---- | Ω² ≡° a. |
| 17 | 62.44 | 24.8 | 33.5 | 18.5 | 84 | NW | .5 | 4.8 | ---- | Cu., S.-Cu. E | 6.9 | Ω² ≡ a. p p. |
| 18 | 62.59 | 24.4 | 30.3 | 21 | 90.2 | NW | .3 | 6.3 | ---- | Cu.-N. NE | 2 | p° ≡² a. |
| 19 | 62.39 | 24.3 | 30.8 | 19.8 | 85.7 | N, NW | .5 | 5.3 | ---- | Cu.-N. NW | ---- | p a. |
| 20 | 61.28 | 23.5 | 32 | 17.8 | 90.2 | NW | .5 | 6 | ---- | S.-Cu. S | 5.6 | Ω² ≡² a. |
| 21 | 59.81 | 25.8 | 32.5 | 22 | 85.7 | SW | .2 | 5.8 | Ci. | Cu.-N. NE | ---- | p a. |
| 22 | 58.91 | 26 | 34.3 | 20.5 | 81.7 | SE | .5 | 1 | ---- | Fr.-Cu. SE | ---- | Ω ² ≡ a. |
| 23 | 58.99 | 25.4 | 33.4 | 20.2 | 84.5 | NW | .8 | 6.5 | ---- | Cu. N, E | ---- | Ω a. |
| 24 | 60.10 | 25.4 | 32.5 | 21.8 | 82.8 | N quad. | 1 | 4.3 | ---- | Cu. NE | ---- | Ω° a. |
| 25 | 61.53 | 25.2 | 32 | 21.4 | 83.5 | NW | .5 | 4.7 | ---- | Cu. Variable | ---- | |
| 26 | 62.23 | 24.1 | 31.4 | 19.4 | 84.2 | NW | .2 | 3.7 | ---- | Cu. W, NW | ---- | Ω a. |
| 27 | 61.77 | 25.3 | 33 | 20.3 | 76.5 | SW | .3 | 2.8 | ---- | Cu. NE | ---- | Ω° a. |
| 28 | 61.90 | 24.7 | 32.8 | 19.3 | 82.7 | NW | .7 | 2.8 | ---- | S.-Cu. NW | ---- | Ω° ≡° a. |
| 29 | 62.30 | 24.7 | 32 | 20.2 | 88 | NW | .3 | 3.2 | ---- | Cu. NW | ---- | |
| 30 | 62.25 | 24.6 | 33.4 | 19.3 | 82.3 | SE | .3 | 3.8 | ---- | Cu. W | ---- | Ω° a. |
| Mean | 761.84 | 24.1 | 31.3 | 19.6 | 83.9 | ---- | .8 | 5.1 | ---- | ---- | ---- | |
| Total | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 26 | |

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | Perct. | | Km.p.h. | 0-10. | | | mm. | |
| 1 | 761.51 | 26.2 | 33.4 | 23.1 | 80 | NE | 11.9 | 0.2 | ---- | Cu.-N. SE | 1 | Ω a. |
| 2 | 62.42 | 25.5 | 28.5 | 21.5 | 79.7 | NE | 15.9 | 4.5 | ---- | Cu.-N. NE | ---- | ● ⌒ a. |
| 3 | 62.92 | 25.8 | 29.5 | 23 | 68.2 | NE | 20.8 | 7.3 | A.-Cu. | S.-Cu., Cu.-N.NE | 4.8 | ● p. |
| 4 | 61.70 | 25.2 | 29.1 | 21.6 | 64.8 | NE | 17.7 | 3.3 | ---- | S.-Cu., Cu.-N.NE | .5 | |
| 5 | 59.59 | 25.5 | 30.4 | 22.1 | 67.5 | NE, N | 16.1 | 4 | A.-Cu. | Cu.-N. N | .3 | ●° a. |
| 6 | 59.25 | 25.5 | 27.7 | 23.7 | 70.5 | N | 26 | 9.5 | A.-Cu. | S.-Cu. N | ---- | |
| 7 | 60.25 | 23.9 | 25.4 | 21.7 | 74 | N, NNE | 27.6 | 10 | ---- | S.-Cu. NE | 1.4 | ●° a. p |
| 8 | 62.12 | 24.4 | 27 | 21.2 | 65.7 | NE | 17.9 | 9.7 | A.-Cu. | S.-Cu. NE | ---- | ●° a. |
| 9 | 64.05 | 24 | 27.6 | 21 | 61.8 | NE | 9.5 | 6.3 | ---- | S.-Cu. NE | ---- | |
| 10 | 64.40 | 22.2 | 27.9 | 18.1 | 78 | Variable | 9.5 | .3 | ---- | Cu.-N. NE | ---- | Ω a. |
| 11 | 63.69 | 22.4 | 26.9 | 18.7 | 82 | E, S | 10.2 | 7.7 | ---- | S.-Cu. E | ---- | |
| 12 | 63.46 | 23.2 | 28 | 20.5 | 81.8 | SE quad. | 9.9 | 4.5 | A.-Cu. E | S.-Cu. E | ---- | Ω a. |
| 13 | 63.62 | 23.9 | 29.4 | 20.6 | 82.8 | SE quad. | 6.1 | 2.2 | A.-Cu. E | S.-Cu. E | 3.3 | Ω ≡° a.● p. |
| 14 | 62.89 | 24.2 | 29.6 | 20.6 | 80.7 | S, E | 11.5 | 0 | ---- | ---- | ---- | Ω a. |
| 15 | 62.72 | 24 | 29.9 | 19.4 | 84.5 | SE, E | 7.4 | 1.8 | ---- | S.-Cu. E | ---- | Ω a. |
| 16 | 62.07 | 25.2 | 30.4 | 21.7 | 82.3 | E, S | 9.9 | 1 | ---- | Cu.-N. SE | ---- | Ω a. |
| 17 | 62.59 | 24.8 | 31.9 | 21.1 | 84.5 | E | 9.9 | 2 | ---- | Cu.-N. E | .8 | Ω a. ●° p. |
| 18 | 62.64 | 24.6 | 29.8 | 22.1 | 87.7 | E | 11.6 | 8.2 | ---- | S.-Cu. E | ---- | ●° a. |
| 19 | 62.44 | 24.5 | 29.4 | 21.5 | 82.8 | E | 8.8 | 3 | A.-Cu. E | S.-Cu. E | ---- | Ω ≡° a. |
| 20 | 61.06 | 23.9 | 28.5 | 19.9 | 86.8 | SW, E | 8.3 | 4.8 | ---- | S.-Cu., Cu.-N. E | 1.3 | Ω ≡° a. |
| 21 | 59.63 | 25.1 | 30.2 | 22.1 | 83.5 | S, E | 9.5 | 3.7 | ---- | S.-Cu. SE | ---- | ●° a. |
| 22 | 58.71 | 25.2 | 30.9 | 21.6 | 82 | S, E | 12.1 | 0 | ---- | ---- | ---- | Ω a. |
| 23 | 58.90 | 25.6 | 30 | 22.3 | 82.3 | NE, N | 9.5 | 2.8 | ---- | Cu.-N. S, SW | 2.8 | Ω a. |
| 24 | 60.24 | 25.2 | 29 | 22.6 | 80.7 | N quad. | 9.5 | 5.5 | ---- | Cu.-N. NE, S | 20.4 | ● a. |
| 25 | 61.62 | 25.1 | 28.6 | 22.4 | 77.8 | NE quad. | 13.1 | 3.7 | ---- | Cu.-N. NE | ---- | ●° a. |
| 26 | 62.09 | 24.7 | 29 | 20.7 | 82.3 | E | 7.8 | .5 | ---- | Cu.-N. S | ---- | Ω ≡° a. |
| 27 | 61.46 | 24.2 | 29.9 | 18.9 | 84.7 | E | 8.4 | 0 | ---- | ---- | ---- | ≡° a. Ω a. p. |
| 28 | 61.77 | 25.2 | 30.8 | 21.4 | 83.2 | S, NE | 8.5 | 2 | ---- | Cu.-N. S | ---- | Ω a. |
| 29 | 62.34 | 25 | 29.4 | 22.1 | 83.3 | NE | 8.1 | 5.3 | A.-Cu. E | S.-Cu. NE | ---- | Ω a. |
| 30 | 62.05 | 25.4 | 30.1 | 22 | 82.2 | E | 8.3 | 3 | ---- | Cu.-N. E, SE | ---- | ⌒ a. |
| Mean | 761.81 | 24.7 | 29.3 | 21.3 | 78.9 | ---- | 12 | 3.9 | ---- | ---- | ---- | |
| Total | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 36.6 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi=6° 03' N; \lambda=121° 00' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 33.5 | 22.1 | 97 | 71 | 6 | 8 | ------ | Ω ≡° a. ↯² p. |
| 2 | 33.3 | 22.5 | 92 | 66 | 6 | 10 | 5.3 | d° a. ●° ⌒° ↯ p. |
| 3 | 32.3 | 22 | 97 | 81 | 5 | 10 | ------ | Ω ≡° a. |
| 4 | 32.8 | 21.8 | 95 | 79 | 8 | 8 | ------ | Ω ≡° a. |
| 5 | 32.5 | 21.5 | 95 | 77 | 8 | 10 | 14.3? | p. a. ●a. p. ⌣² p. |
| 6 | 30.4 | 21.5 | 97 | 73 | 10 | 10 | 3.8? | ●° a. p. |
| 7 | 30 | 21.1 | 97 | 73 | 10 | 10 | ? | Ω ≡°p a. ●°a. p. |
| 8 | 29.9 | 21.1 | 90 | 74 | 10 | 10 | 2 ? | p p. |
| 9 | 30 | 20.4 | 96 | 76 | 10 | 10 | 50.3 | ● ↯² p. |
| 10 | 32.2 | 21.9 | 97 | 78 | 10 | 10 | 5.8 | ≡ ●° a. ↯² p. |
| 11 | 30.5 | 21.4 | 95 | 75 | 10 | 10 | 19.6 | Ω ≡° a. ● p. |
| 12 | 31.3 | 21.2 | 96 | 76 | 10 | 10 | ------ | ↯² p. |
| 13 | 30.4 | 21.4 | 85 | 79 | 8 | 10 | ------ | Ω a. |
| 14 | 31.3 | 21.1? | 91 | 79 | 10 | 10 | ------ | Ω a. |
| 15 | 32 | 21.8 | 81 | 77 | 10 | 10 | ------ | Ω a. |
| 16 | 32.1 | 21.5 | 90 | 82 | 8 | 8 | ------ | Ω° a. |
| 17 | 32.2 | 21.4 | 91 | 74 | 10 | 4 | ------ | Ω° a. |
| 18 | 32.1 | 21 | 94 | 78 | 6 | 10 | ------ | Ω° ↯² a. |
| 19 | 31.9 | 20.8 | 89 | 75 | 8 | 10 | 3 | Ω° a. d p p. |
| 20 | 31.6 | 20.9 | 91 | 74 | 10 | 10 | ------ | Ω° a. ↯² p. |
| 21 | 31.4 | 20.4? | 79 | 77 | 10 | 10 | 10.4 | Ω° a. p ● p. |
| 22 | 30.1 | 20.2 | 97 | 71 | 5 | 10 | ------ | Ω ≡° a. ↯² p. |
| 23 | 32.1 | 21.4 | 87 | 72 | 10 | 10 | ------ | Ω a. ↯² p. |
| 24 | 32.6 | 22.2 | 96 | 72 | 8 | 8 | ------ | Ω° a. |
| 25 | 32.8 | 21.9 | 97 | 65 | 8 | 8 | ------ | Ω° a. |
| 26 | 33 | 22.8 | 89 | 79 | 10 | 10 | ------ | Ω a. |
| 27 | 32.8 | 22.8 | 95 | 74 | 10 | 10 | ------ | ↯² Ω ≡° a. |
| 28 | 32.3 | 22.8 | 95 | 79 | 10 | 10 | ------ | Ω° a. |
| 29 | 31.7 | 22.9 | 94 | 76 | 10 | 10 | ------ | Ω° a. |
| 30 | 32.9 | 21.8 | 96 | 79 | 6 | 10 | 20.1 | Ω ≡° a. ● p. |
| Mean | 31.8 | 21.6 | 92.7 | 75.4 | 8.7 | 9.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 134.6? | |

### ISABELA, BASILAN.

[$\phi=6° 42' N; \lambda=121° 58' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.8 | 23.4 | 97 | 78 | 3 | 5 | ------ | Ω° a. ↯ p. |
| 2 | 30.5 | 22.5 | 96 | 81 | 1 | 10 | 0.8 | Ω a. ●° p. |
| 3 | 32.3 | 22.5 | 95 | 78 | 9 | 8 | ------ | Ω° a. ⌣ p. |
| 4 | 31.7 | 22.5 | 97 | 72 | 0 | 9 | ------ | Ω a. ⌣ p. |
| 5 | 30.5 | 20.5 | 98 | 70 | 2 | 4 | ------ | Ω a. |
| 6 | 30.3 | 21.2 | 96 | 75 | 10 | 10 | ------ | Ω a. |
| 7 | 30.5 | 22.5 | 91 | 76 | 10 | 10 | ------ | Ω a. |
| 8 | 31.1 | 22.1 | 97 | 75 | 10 | 10 | ------ | Ω° a. |
| 9 | 32.3 | 21.9 | 97 | 82 | 10 | 9 | ------ | Ω° a. |
| 10 | 32.3 | 22.3 | 97 | 72 | 9 | 4 | .8 | Ω° a. ↯ ⊤ p. |
| 11 | 32.3 | 22.4 | 91 | 76 | 10 | 5 | ------ | ●° a. |
| 12 | 31.3 | 22.4 | 98 | 68 | 1 | 3 | ------ | Ω a. ⊤ p. |
| 13 | 31.1 | 20.5 | 91 | 70 | 0 | 3 | ------ | Ω² a. |
| 14 | 33.9 | 22.4 | 94 | 65 | 2 | 7 | ------ | Ω a. |
| 15 | 33.8 | 23 | 94 | 69 | 1 | 4 | ------ | Ω a. ↯ ⊤ p. |
| 16 | 33.3 | 22 | 96 | 69 | 3 | 4 | ------ | Ω d ⌒ a. |
| 17 | 33.5 | 22.5 | 96 | 73 | 1 | 4 | ------ | Ω p° a. |
| 18 | 33.1 | 22.4 | 92 | 68 | 3 | 5 | ------ | Ω a. ⌈↯ p. |
| 19 | 33.3 | 23 | 98 | 74 | 10 | 6 | ------ | Ω p° a. |
| 20 | 34 | 23 | 97 | 68 | 9 | 4 | 11.7 | Ω a. ⊤ ↯ p. |
| 21 | 32.8 | 23 | 98 | 80 | 10 | 5 | ------ | ● ⊤ a. |
| 22 | 33.8 | 22.7 | 96 | 81 | 8 | 7 | ------ | Ω a. |
| 23 | 33.8 | 23 | 96 | 71 | 2 | 4 | ------ | Ω a. ↯ p. |
| 24 | 29.5 | 23 | 88 | 79 | 1 | 5 | ------ | Ω a. ⊤ a. p. |
| 25 | 32.5 | 22.5 | 96 | 66 | 9 | 3 | ------ | d a. |
| 26 | 34 | 23.5 | 92 | 75 | 2 | 4 | ------ | Ω a. |
| 27 | 32.8 | 23 | 92 | 67 | 1 | 3 | ------ | Ω a. |
| 28 | 33.7 | 22.5 | 96 | 72 | 3 | 9 | ------ | d ⊤ a. p° p. |
| 29 | 32.8 | 22 | 93 | 65 | 1 | 4 | ------ | Ω a. ⊤ p. |
| 30 | 30.3 | 21.5 | 92 | 65 | 8 | 8 | ------ | Ω a ⌈↯ ⌣ p. |
| Mean | 32.3 | 22.4 | 94.9 | 72.7 | 5.0 | 5.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 13.3 | |

### ZAMBOANGA.

[$\phi=6° 54' N; \lambda=122° 05' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 32 | 23.5 | 92 | 71 | 5 | 9 | ------ | |
| 2 | 30.5 | 23.5 | 83 | 62 | 5 | 9 | ------ | |
| 3 | 29.5 | 22.5 | 85 | 66 | 7 | 10 | 2 | ● p. |
| 4 | 31.7 | 21.5 | 83 | 68 | 2 | 3 | ------ | |
| 5 | 32.1 | 22.2 | 79 | 64 | 5 | 6 | ------ | |
| 6 | 29.5 | 21.5 | 83 | 73 | 10 | 10 | ------ | ○ p. |
| 7 | 29.5 | 23.2 | 93 | 75 | 9 | 9 | 9.7 | d a. ● p. |
| 8 | 29.9 | 22.8 | 82 | 68 | 10 | 10 | ------ | |
| 9 | 32.2 | 23.5 | 86 | 76 | 10 | 7 | ------ | |
| 10 | 32 | 23.6 | 86 | 74 | 8 | 8 | 7.9 | ↯ p. |
| 11 | 31.5 | 23.5 | 96 | 58 | 10 | 4 | ------ | ● d a. |
| 12 | 31.8 | 22.8 | 84 | 60 | 2 | 1 | ------ | |
| 13 | 31.6 | 21.5 | 89 | 71 | 5 | 7 | ------ | ↯ p. |
| 14 | 32.5 | 22.9 | 90 | 69 | 4 | 7 | ------ | d p. |
| 15 | 33.4 | 23 | 89 | 74 | 2 | 1 | ------ | ⌈↯ p. |
| 16 | 33.1 | 23.4 | 91 | 65 | 1 | 2 | ------ | |
| 17 | 33.4 | 22.9 | 87 | 75 | 2 | 8 | ------ | ⌈↯ p. |
| 18 | 32.9 | 23.9 | 92 | 72 | 3 | 3 | ------ | |
| 19 | 33.5 | 23.8 | 93 | 68 | 8 | 5 | ------ | ⌈↯° p. |
| 20 | 31.4 | 23.5 | 82 | 79 | 8 | 4 | 5.8 | ⌈↯ p. |
| 21 | 30 | 24 | 94 | 74 | 4 | 3 | ------ | ● d a. |
| 22 | 30.6 | 23.5 | 89 | 78 | 9 | 8 | ------ | ↯ p. |
| 23 | 31.5 | 23.9 | 89 | 76 | 8 | 7 | ------ | |
| 24 | 32 | 23.5 | 89 | 81 | 5 | 7 | ------ | |
| 25 | 33.1 | 23.3 | 90 | 63 | 8 | 7 | ------ | |
| 26 | 31 | 23.6 | 91 | 77 | 6 | 7 | 1.8 | ⌈↯ p. |
| 27 | 32.5 | ------ | 94 | ------ | 6 | ------ | ------ | ⌈↯ ● a. |
| 28 | 31.9 | ------ | 89 | 71 | 9 | 6 | ------ | ⌈↯ p. |
| 29 | 31.9 | 23 | 89 | 77 | 7 | 2 | ------ | |
| 30 | 29.5 | 23.3 | 87 | 71 | 2 | 5 | ------ | |
| Mean | 31.6 | 23.1 | 88.2 | 70.9 | 6 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 27.2 | |

### DAVAO.

[$\phi=7° 01' N; \lambda=125° 35' E$]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31 | 22.3 | 97 | 73 | 5 | 6 | ------ | |
| 2 | 31.6 | 21.9 | 98 | 70 | 5 | 7 | ------ | |
| 3 | 31.7 | 21.7 | 97 | 69 | 6 | 5 | 19 | ⊤ ● p. |
| 4 | 31.2 | 21 | 98 | 66 | 6 | 5 | ------ | |
| 5 | 31.7 | 22.3 | 97 | 69 | 6 | 5 | ------ | |
| 6 | 31.3 | 20.7 | 95 | 64 | 5 | 6 | ------ | |
| 7 | 31 | 19.5 | 95 | 66 | 5 | 6 | 16.3 | ● p. |
| 8 | 31.5 | 21.4 | 98 | 63 | 5 | 6 | ------ | |
| 9 | 32.1 | 22.1 | 94 | 72 | 5 | 6 | ------ | |
| 10 | 31.7 | 21.6 | 96 | 71 | 5 | 6 | ------ | |
| 11 | 30.7 | 22.1 | 96 | 66 | 5 | 6 | ------ | |
| 12 | 31.2 | 19.6 | 94 | 68 | 5 | 5 | ------ | |
| 13 | 32.1 | 20.7 | 91 | 70 | 6 | 5 | ------ | |
| 14 | 30.7 | 19.1 | 97 | 75 | 6 | 8 | ------ | |
| 15 | 31.5 | 21 | 96 | 67 | 6 | 5 | 10.7 | ⌒ ● p. |
| 16 | 31.9 | 21.7 | 98 | 66 | 6 | 5 | ------ | |
| 17 | 31.1 | 22.5 | 97 | 71 | 5 | 8 | 25.1 | ● p. |
| 18 | 30.5 | 21.8 | 96 | 73 | 6 | 5 | ------ | |
| 19 | 31.7 | 21.4 | 96 | 70 | 6 | 8 | 18.5 | ● p. |
| 20 | 30.7 | 22.1 | 98 | 83 | 6 | 10 | ------ | d° p. |
| 21 | 31.3 | 21.5 | 97 | 68 | 6 | 5 | ------ | |
| 22 | 31.5 | 21 | 97 | 68 | 6 | 8 | ------ | |
| 23 | 31.7 | 22.1 | 96 | 70 | 5 | 6 | ------ | |
| 24 | 31.7 | 22.6 | 97 | 70 | 5 | 7 | ------ | |
| 25 | 31.2 | 22.3 | 96 | 70 | 6 | 7 | 2.3 | ●° p. |
| 26 | 32.6 | 22.5 | 96 | 66 | 5 | 6 | ------ | |
| 27 | 28.8 | 21.5 | 96 | 74 | 8 | 8 | ------ | d a. |
| 28 | 30.8 | 21.3 | 96 | 68 | 6 | 7 | ------ | |
| 29 | ------ | 21.1 | 96 | 56 | 6 | 5 | ------ | |
| 30 | 32.6 | 22.1 | 97 | 63 | 6 | 5 | ------ | |
| Mean | 31.3 | 21.5 | 96.3 | 68.8 | 5.6 | 6.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 91.9 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAGAYAN, MISAMIS.

[$\phi$=8° 29′ N; $\lambda$=124° 38′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.9 | 22.4 | 84 | 69 | 6 | 10 | ------ | Ω a. ⊍ ⩽ p. |
| 2 | 31.3 | 21.2 | 92 | 71 | 2 | 7 | ------ | Ω° ○ a. |
| 3 | 31.6 | 21.8 | 86 | 68 | 7 | 4 | ------ | Ω° a. |
| 4 | 30.9 | 22.6 | 86 | 70 | 4 | 8 | 0.8 | Ω a. ⊍ d p. |
| 5 | 30.5 | 22.6 | 92 | 64 | 6 | 6 | ------ | Ω$^2$ a. ⊍ p. |
| 6 | 31 | 20.5 | 83 | 64 | 8 | 6 | ------ | Ω a. ⊍ p. |
| 7 | 31.5 | 21.5 | 86 | 68 | 7 | 6 | ------ | Ω a. ⊍ p. |
| 8 | 31.9 | 20.5 | 83 | 62 | 5 | 4 | ------ | Ω° a. ⩽ p. |
| 9 | 31.8 | 22.5 | 89 | 72 | 6 | 5 | ------ | Ω$^2$ a. |
| 10 | 31.4 | 21.5 | 87 | 65 | 3 | 4 | ------ | Ω° a. |
| 11 | 31.5 | 23.8 | 86 | 59 | 3 | 3 | ------ | Ω a. |
| 12 | 31.2 | 20.9 | 87 | 58 | 1 | 2 | ------ | Ω a. |
| 13 | 31.8 | 21.4 | 87 | 64 | 1 | 6 | ------ | Ω a. ⌈⩽ d° p. |
| 14 | 32 | 22 | 88 | 70 | 2 | 6 | ------ | Ω a. d° ⩽ p. |
| 15 | 32.4 | 22.1 | 87 | 71 | 3 | 7 | ------ | Ω a. d° ⩽ p. |
| 16 | 32.9 | 22 | 89 | 64 | 1 | 3 | ------ | Ω$^2$ a. |
| 17 | 32.3 | 21.9 | 91 | 58 | 1 | 3 | ------ | Ω a. ⩽ p. |
| 18 | 32.3 | 21.9 | 87 | 62 | 2 | 2 | ------ | Ω° a. |
| 19 | 31.9 | 21.9 | 90 | 65 | 2 | 2 | ------ | Ω a. ⩽ p. |
| 20 | 32.3 | 22.5 | 84 | 62 | 2 | 4 | ------ | Ω a. |
| 21 | 32.1 | 21.6 | 88 | 65 | 1 | 2 | ------ | Ω° a. ⌒ p. |
| 22 | 31.8 | 22 | 88 | 70 | 3 | 4 | ------ | Ω a. ⌒ ⩽ p. |
| 23 | 32 | 22.1 | 88 | 66 | 1 | 3 | ------ | Ω a. ⌒ ⩽ p. |
| 24 | 31.5 | 21.6 | 88 | 64 | 1 | 3 | ------ | Ω a. |
| 25 | 32.5 | 21.8 | 90 | 60 | 1 | 4 | ------ | Ω$^2$ a. |
| 26 | 32.5 | 22.5 | 89 | 57 | 0 | 2 | ------ | Ω$^2$ a. ⩽ p. |
| 27 | 31.5 | 23.5 | 86 | 58 | 3 | 6 | .1 | Ω a. d° ⩽ p. |
| 28 | 30.3 | 22.4 | 93 | 70 | 6 | 4 | ------ | Ω a. |
| 29 | 31.7 | 22.1 | 94 | 74 | 3 | 4 | ------ | Ω a. ⊍$^2$ p. |
| 30 | 29.9 | 22 | 93 | 74 | 3 | 8 | ------ | Ω a. |
| Mean | 31.6 | 22 | 88 | 65.5 | 3.1 | 4.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | .9 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 28.1 | 22.6 | 97 | 89 | 10 | 10 | 13.2 | Ω ≡ a. ● a. p. |
| 2 | 27.3 | 22.2 | 97 | 86 | 9 | 10 | 23.6 | d ● a. p. ⊍$^2$ p. |
| 3 | 28.2 | 22.6 | 97 | 79 | 10 | 6 | 8.2 | ⩽ ● a. p. |
| 4 | 28 | 21.7 | 97 | 79 | 7 | 9 | 6.9 | ○ ● a. ⊍$^2$ p. |
| 5 | 28 | 23.6 | 86 | 58 | 10 | 6 | .8 | ●$^2$↙°○$^2$a. ○ ⊍ p. |
| 6 | 29.5 | 21.2 | 93 | 54 | 10 | 8 | ------ | Ω$_2$ a. ○ ↙° p. |
| 7 | 29.2 | 19.7 | 92 | 64 | 8 | 9 | ------ | Ω a. ○ a. p. |
| 8 | 29.5 | 21.9 | 92 | 72 | 9 | 7 | ------ | Ω a. |
| 9 | 29.5 | 24 | 97 | 71 | 8 | 7 | .3 | Ω a. ⊤$^2$ ●° ⩽ p. |
| 10 | 28.5 | 23.1 | 96 | 88 | 8 | 9 | 3.3 | Ω d° a. ● d p. |
| 11 | 28.2 | 22.1 | 96 | 64 | 4 | 5 | ------ | Ω a. |
| 12 | 28.7 | 19.7 | 98 | 59 | 10 | 4 | ------ | Ω$^2$ ≡ a. |
| 13 | 28 | 20.8 | 95 | 83 | 4 | 9 | .6 | ●° a. p. ⊤ ⩽ p. |
| 14 | 29.1 | 22.7 | 96 | 80 | 7 | 9 | .6 | Ω a. ● a. p. ⩽ p. |
| 15 | 29.5 | 23.1 | 96 | 72 | 8 | 8 | 2.6 | ●° a. p. ⌈⩽ p. |
| 16 | 30.3 | 23.6 | 95 | 84 | 5 | 9 | 2 | ●° a. p. ⊤ d p. |
| 17 | 30 | 23 | 95 | 70 | 4 | 4 | ------ | Ω$^2$ ⌒ a. |
| 18 | 29.5 | 22.1 | 95 | 87 | 4 | 8 | 20.6 | Ω a. ● p. |
| 19 | 30 | 22 | 97 | 75 | 5 | 4 | .1 | Ω$^2$ ≡ a. ● p. |
| 20 | 29.2 | 23.6 | 95 | 75 | 7 | 7 | 12.2 | Ω a. ● a. p. ⊤ p. |
| 21 | 29 | 22.6 | 96 | 82 | 2 | 9 | 2.3 | Ω$^2$a. ●° a. p. ⊤$^2$p. |
| 22 | 29 | 22 | 97 | 69 | 6 | 8 | 6.4 | Ω$^2$ d° a. ● ⌒ p. |
| 23 | 29.2 | 22.2 | 95 | 74 | 4 | 8 | ------ | d° ⊤ a. ●° ⌒ p. |
| 24 | 30.5 | 22.8 | 96 | 84 | 3 | 5 | 4.6 | Ω$^2$ a. ● ⌒ ⊤ p. |
| 25 | 30.1 | 22.7 | 91 | 69 | 0 | 5 | 3 | Ω a. ● ⊤ ⩽ p. |
| 26 | 30.2 | 22.4 | 95 | 65 | 4 | 4 | ------ | Ω$^2$ a. |
| 27 | 26.6 | 22.5 | 96 | 93 | 10 | 10 | 24.6 | ● ⊤$^2$ a. p. ⩽ p. |
| 28 | 28 | 21.9 | 93 | 80 | 9 | 6 | ------ | Ω d° a. ⌒ ⩽ p° p. |
| 29 | 28.6 | 21.5 | 96 | 75 | 2 | 5 | .2 | Ω a. d° a. p. ⌒ p. |
| 30 | 29.1 | 23.2 | 97 | 92 | 10 | 10 | 18 | d a. ⊤ ● p. |
| Mean | 29 | 22.3 | 95.1 | 75.7 | 6.6 | 7.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 154.1 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.8 | 24.6 | 88 | 75 | 10 | 10 | ------ | Ω ○ a. d ⩽ p. |
| 2 | 31.2 | 24.8 | 92 | 62 | 10 | 10 | ------ | Ω ○$^2$ a. ⊍ p. |
| 3 | 30.6 | 23 | 85 | 71 | 10 | 10 | 3 | Ω a. ●° a. p. |
| 4 | 30.8 | 24 | 83 | 65 | 10 | 9 | ------ | Ω a. d ⊍$^2$ p. |
| 5 | 30.6 | 21.6 | 73 | 60 | 10 | 10 | ------ | Ω a. |
| 6 | 31.3 | 21.2 | 76 | 59 | 10 | 10 | ------ | ⊍ a. ○° p. |
| 7 | 31.6 | 21 | 72 | 61 | 10 | 10 | ------ | ⊍$^2$ a. p. ⩽ p. |
| 8 | 30.8 | 21.7 | 73 | 64 | 10 | 10 | ------ | Ω a. ○ a. p. ⊍ p. |
| 9 | 30.4 | 23.9 | 87 | 72 | 10 | 5 | ------ | Ω° a. ⌈⩽° p. |
| 10 | 30.4 | 23.8 | 82 | 71 | 10 | 10 | 26.2 | d° a. ● a. p. |
| 11 | 29.8 | 22.6 | 86 | 64 | 10 | 8 | ------ | ● d a. |
| 12 | 29.6 | 22.6 | 76? | 62 | 10 | 3 | ------ | |
| 13 | 30.8 | 24.3 | 72? | 71 | 10 | 10 | 6.6 | Ω a. ● p. |
| 14 | 29.7 | 24 | 90 | 78 | 10 | 8 | 1.6 | Ω a. ●° p. |
| 15 | 30.2 | 24.6 | 75 | 84 | 10 | 10 | .8 | ●° a. ⩽° p. |
| 16 | 30.6 | ------ | 80 | 76 | 10 | 8 | ------ | d° p. |
| 17 | 29.6 | 22.2 | 77 | 77 | 10 | 8 | 1.3 | Ω ●° a. ⩽° p. |
| 18 | 30 | 24.6 | 80 | 86 | 10 | 10 | .5 | ↙° ●° ⩽ p. |
| 19 | 30.6 | 24.4 | 76 | 76 | 10 | 4 | ------ | ⌒° ⩽ p. |
| 20 | 30.8 | 25.8 | 75? | 75 | 10 | 10 | ------ | ⌒$^2$ a. d a. p. |
| 21 | 30.6 | 25.3 | 80 | 70 | 5 | 10 | ------ | d a. |
| 22 | 31.3 | 24.4 | 88 | 68 | 10 | 6 | ------ | Ω° a. d° p. |
| 23 | 30.8 | 25 | 85 | 74 | 10 | 10 | ------ | Ω° a. ⩽° p. |
| 24 | 30.6 | 24.7 | 82 | 74 | 10 | 3 | ------ | Ω° a. |
| 25 | 30.4 | 25.4 | 79 | 74 | 10 | 3 | ------ | Ω a. |
| 26 | 30.8 | 25.2 | 81 | 72 | 10 | 4 | ------ | ⩽ p. |
| 27 | 30.5 | 24.2 | 83 | 63 | 10 | 10 | ------ | Ω° a. ⊍° d p. |
| 28 | 31.3 | 24.2 | 86 | 65 | 10 | 6 | ------ | d° a. |
| 29 | 31.4 | 24.4 | 83 | 82 | 7 | 10 | ------ | Ω° d° a. d p. |
| 30 | 31 | 24.2 | 80 | 79 | 10 | 10 | 2.5 | d° a. p. d ⩽° p. |
| Mean | 30.7 | 23.9 | 80.8 | 71 | 9.7 | 8.2 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 42.5 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30 | 24.7 | 91 | 78 | 10 | 10 | 1.5 | ○ a. ●° a. p. ⊍ p. |
| 2 | 31.8 | 26.4 | 86 | 76 | 9 | 6 | 1.3 | p° ○ ⊍ p. |
| 3 | 31.7 | 26.5 | 77 | 72 | 6 | 6 | .3 | ⊕ a. p. ⌒ p p. |
| 4 | 30.7 | 25.6 | 80 | 77 | 7 | 8 | 12.4 | ● ○ a. d° ⏀$^2$ ● p. |
| 5 | 31.4 | 24.6 | 92 | 72 | 6 | 4 | 13.7 | ○ a. ● ⊕$^2$ a. p., ⊍ |
| 6 | 27.8 | 23.6 | 98 | 85 | 10 | 10 | 1 | d a. ○$^2$ d° ⩽ ⊍ ⏀ |
| 7 | 31.5 | 26.2 | 84 | 72 | 10 | 4 | ------ | ⏀ p. |
| 8 | 31.1 | 26.6 | 87 | 72 | 4 | 4 | ------ | |
| 9 | 31.3 | 25 | 94 | 73 | 4 | 4 | ------ | Ω$^2$ a. d° p. |
| 10 | 31 | 25 | 93 | 73 | 4 | 4 | .5 | ⊍° ⏀ Ω$^2$ a. |
| 11 | 29.8 | 24.9 | 92 | 75 | 6 | 4 | .5 | p ⌒ a. ⩽° p. |
| 12 | 30.1 | 25.6 | 88 | 75 | 2 | 8 | .5 | ●° p. |
| 13 | 30.3 | 25.8 | 86 | 71 | 6 | 4 | 2.8 | |
| 14 | 29.2 | 24.6 | 94 | 79 | 6 | 4 | 3.8 | ⌈⩽° ●° a. ⌒ ●° ⩽ |
| 15 | 30.8 | 24.4 | 97 | 71 | 6 | 2 | .5 | ●° a. p. ⩽ p. |
| 16 | 30.4 | 25.5 | 85 | 69 | 4 | 4 | ------ | d a. |
| 17 | 30.4 | 26.1 | 85 | 75 | 4 | 6 | .5 | d° a. p. ○ p. |
| 18 | 30.8 | 25.4 | 84 | 74 | 4 | 4 | 2 | p p. |
| 19 | 31 | 24.6 | 91 | 72 | 4 | 4 | ------ | |
| 20 | 31.7 | 24.8 | 92 | 73 | 2 | 4 | ------ | Ω a. |
| 21 | 32.4 | 25 | 93 | 60 | 6 | 2 | ------ | Ω ⊕ a. |
| 22 | 31.4 | 21.8 | 90 | 65 | 1 | 2 | ------ | Ω a. |
| 23 | 31.6 | 24.6 | 92 | 66 | 4 | 4 | ------ | Ω a. ⊕ p. |
| 24 | 31.4 | 24.8 | 88 | 71 | 1 | 4 | ------ | Ω° d° a. |
| 25 | 31.4 | 25.4 | 84 | 70 | 2 | 4 | 7.1 | Ω a. d ● ⩽ p. |
| 26 | 30.5 | 24.7 | 88 | 75 | 4 | 4 | 1.5 | ● ⊕ a. ⩽ p. |
| 27 | 30.3 | 25.6 | 81 | 70 | 2 | 4 | 4.1 | ● p. |
| 28 | 31.3 | 23.7 | 93 | 72 | 10 | 6 | 7.1 | ○ a. p. |
| 29 | 28.5 | ------ | 95 | 80 | 8 | 9 | 12 | ● a. ○$^2$ d° p. |
| 30 | 30.7 | 24.6 | 93 | 78 | 6 | 6 | 2 | ●° a. d° p. |
| Mean | 30.7 | 25.1 | 89.1 | 73 | 5.3 | 5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 75.1 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SURIGAO.

[$\phi=9°\ 48'$ N; $\lambda=125°\ 29'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 28.7 | 23.2 | 97 | 83 | 9 | 9 | 2.8 | ≡ a. d a. p. ⊍° p. |
| 2 | 28.7 | 23.2 | 97 | 76 | 10 | 8 | .2 | d a. ⊍° p. |
| 3 | 28.7 | 22.5 | 97 | 86 | 9 | 10 | .3 | Ω a. d° a. p. |
| 4 | 28.9 | 22.9 | 92 | 69 | 10 | 9 | ------ | d°○a. p. ∞⊍² p. |
| 5 | 30.1 | 21.8 | 93 | 62 | 9 | 8 | ------ | ○° a. p. ∞² ⊍ p. |
| 6 | 30.9 | 25.3 | 72 | 59 | 9 | 9 | ------ | ○° a. ∞ p. |
| 7 | 31.5 | 26.4 | 75 | 67 | 9 | 9 | ------ | ∞ ⊍° p. |
| 8 | 30.4 | 25.4 | 79 | 66 | 10 | 9 | ------ | ∞° ○° ↯ p. |
| 9 | 29.7 | 24.4 | 93 | 79 | 10 | 9 | 2.3 | ∞° d ⌈↯° p. |
| 10 | 26.5 | 23.3 | 88 | 92 | 10 | 10 | 8.7 | d a. ● a. p. |
| 11 | 29.7 | 24.4 | 75 | 58 | 7 | 1 | ------ | ∞° p. |
| 12 | 31.5 | 19.7 | 94 | 69 | 3 | 7 | ------ | Ω² a. |
| 13 | 29.5 | 24.5 | 86 | 93 | 6 | 10 | 23.1 | d² a. ● d° ↯° p. |
| 14 | 31.2 | 24 | 90 | 90 | 3 | 10 | 26.6 | ● a. p. ⌈↯° p. |
| 15 | 30.2 | 23.7 | 95 | 86 | 9 | 10 | 5.1 | ● ⌈↯° a. p. |
| 16 | 31.2 | 24.7 | 91 | 86 | 7 | 9 | 11.4 | ● a. p. d° p. |
| 17 | 28.4 | 23.9 | 96 | 95 | 9 | 9 | 35.5 | ⌈↯° a. d ● a. p. |
| 18 | 29.1 | 24 | 90 | 89 | 5 | 10 | 11 | ⌒° ● a. d° a. p. |
| 19 | 30.7 | 23.7 | 97 | 88 | 9 | 9 | .7 | d° a. d ●° p. |
| 20 | 29.8 | 23.7 | 97 | 78 | 8 | 8 | 9.4 | Ω ⌒ d a. d ● p. |
| 21 | 30 | 23.4 | 98 | 86 | 9 | 5 | 3.6 | ● a. d a. p. |
| 22 | 30.3 | 23.4 | 97 | 84 | 8 | 5 | .3 | Ω d° a. ∞ p. |
| 23 | 30.6 | 23.2 | 97 | 81 | 2 | 7 | .1 | Ω² d° a. d p. |
| 24 | 31 | 23.7 | 96 | 80 | 6 | 9 | ------ | Ω a. d° p. |
| 25 | 31.5 | 23 | 97 | 81 | 4 | 5 | .1 | Ω a. d p. |
| 26 | 31.5 | 25.5 | 87 | 72 | 2 | 4 |  |  |
| 27 | 31.3 | 24.1 | 84 | 87 | 6 | 10 | 27 | ●° a. ● ⌈↯ p. |
| 28 | 29 | 22.9 | 98 | 84 | 6 | 5 | .1 | d° a. |
| 29 | 30.6 | 23.7 | 96 | 72 | 5 | 3 | 5.3 | d ● a. d² p. |
| 30 | 29.3 | 23.6 | 96 | 92 | 9 | 9 | 2.3 | d° ⊤ a. ⌈↯ ● p. |
| Mean | 30 | 23.7 | 91.3 | 79.7 | 7.3 | 7.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 175.9 |  |

### MAASIN.

[$\phi=10°\ 08'$ N; $\lambda=124°\ 50'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31 | 22.8 | 95 | 87 | 10 | 10 | ------ | d ⌒° p. |
| 2 | 31.1 | 22.7 | 93 | 68 | 10 | 10 | ------ |  |
| 3 | 30.5 | 23 | 94 | 89 | 10 | 10 | ------ | d ↯ p. |
| 4 | 30 | 22.6 | 93 | 63 | 10 | 10 | ------ | ⩀² ↯ p. |
| 5 | 30 | 22.7 | 87 | 80 | 10 | 8 | ------ | ⊍² ⩀ p. |
| 6 | 30.2 | 22.6 | 90 | 71 | 10 | 10 | ------ |  |
| 7 | 30.3 | 22.7 | 91 | 73 | 10 | 10 | ------ |  |
| 8 | 31.5 | 23.8 | 90 | 78 | 10 | 10 | ------ | ⩀² p. |
| 9 | 31.5 | 23 | 86 | 84 | 10 | 7 | ------ | ⩀ ↯ p. |
| 10 | 31.5 | 23 | 93 | 72 | 10 | 10 | ------ |  |
| 11 | 31.5 | 23 | 79 | 67 | 10 | 10 | ------ |  |
| 12 | 31.5 | 20.3 | 93 | 63 | 10 | 5 | ------ | d ⌒² ↯ p. |
| 13 | 31.2 | 22.6 | 90 | 74 | 10 | 10 | 26.6 | ● a. p. d ⌈↯ p. |
| 14 | 31 | 22.6 | 88 | 79 | 10 | 10 | 12.7 | d ⊤² a. d ↯ p p. |
| 15 | 31.1 | 22.7 | 90 | 74 | 10 | 8 | ------ |  |
| 16 | 31 | 22.8 | 89 | 77 | 8 | 7 | 20.8 | d a. ● p. |
| 17 | 30 | 22.7 | 94 | 89 | 10 | 10 | 28.2 | d ● ⊤² a. p. ↯ p. |
| 18 | 30 | 22.8 | 93 | 84 | 10 | 10 | 9.7 | d p a. |
| 19 | 30.8 | 22.5 | 95 | 78 | 8 | 10 | ------ |  |
| 20 | 30.8 | 22.5 | 91 | 73 | 10 | 7 | 3 | d² a. |
| 21 | 31.2 | 22.6 | 90 | 78 | 6 | 8 | ------ |  |
| 22 | 31.2 | 22.6 | 91 | 88 | 10 | 8 | ------ |  |
| 23 | 31.2 | 22.6 | 91 | 80 | 10 | 4 | ------ |  |
| 24 | 30 | 22.6 | 95 | 85 | 8 | 8 | ------ |  |
| 25 | 30.4 | 22.6 | 91 | 79 | 10 | 8 | ------ | ∞ p. |
| 26 | 31.5 | 22.7 | 94 | 70 | 10 | 5 | 7.6 | p d ↯ p. |
| 27 | 31.5 | 22.2 | 96 | 79 | 10 | 10 | ------ | d° a. d ⌈↯ ⊍ p. |
| 28 | 30.5 | 22.1 | 91 | 80 | 10 | 8 | ------ | ⊍ d° p. |
| 29 | 31.4 | 22.3 | 91 | 78 | 10 | 8 | ------ | d° a. d ↯ p. |
| 30 | 31.4 | 22.2 | 87 | 75 | 10 | 10 | ------ | d° a. d. ⩀ ⊍ p. |
| Mean | 30.9 | 22.6 | 91 | 77.2 | 9.7 | 8.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 108.6 |  |

### SAN JOSE BUENAVISTA.

[$\phi=10°\ 44'$ N; $\lambda=121°\ 55'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.3 | 22 | 87 | 72 | 4 | 9 | ------ | Ω² a. ⊤ a. p. d² p. |
| 2 | 33.9 | 21.6 | 88 | 60 | 9 | 8 | ------ | Ω² a. ⩀ p. |
| 3 | 31.3 | 22.5 | 87 | 72 | 10 | 10 | ------ | Ω° a. d ○ p. |
| 4 | 32.3 | 21.4 | 92 | 56 | 9 | 8 | ------ | Ω² a. ⩀ p. |
| 5 | 31.4 | 19.6 | 86 | 55 | 8 | 6 | ------ | Ω² a. ⊕ p. |
| 6 | 32.8 | 21 | 81 | 61 | 10 | 10 | ------ | Ω° a. |
| 7 | 32.3 | 22.1 | 78 | 65 | 10 | 8 | ------ | Ω² a. |
| 8 | 32.9 | 22.1 | 85 | 69 | 9 | 10 | ------ | Ω° a. |
| 9 | 33.2 | 21.7 | 87 | 62 | 2 | 1 | ------ | Ω² a. ⊤ p. |
| 10 | 33.9 | 21.6 | 91 | 63 | 6 | 1 | ------ | Ω² a. |
| 11 | 33.8 | 20.3 | 92 | 52 | 0 | 0 | ------ | Ω² a. |
| 12 | 33.8 | 19.1 | 80 | 52 | 0 | 0 | ------ | Ω² a. |
| 13 | 35.7 | 19.6 | 90 | 56 | 1 | 4 | 1.3 | Ω² a. ↯ ● p. |
| 14 | 34.3 | 23.1 | 93 | 66 | 10 | 10 | .3 | d² a. d p ⊤ ↯ p. |
| 15 | 35.3 | 21.5 | 88 | 68 | 2 | 10 | ------ | Ω² a. ↯ p. |
| 16 | 35.3 | 22.4 | 91 | 69 | 2 | 8 | .5 | Ω² a. ● ↯ p. |
| 17 | 35.2 | 22.2 | 92 | 47 | 5 | 4 | ------ | Ω° a. ↯ p. |
| 18 | 35.4 | 22.4 | 92 | 62 | 1 | 9 | ------ | Ω° a. |
| 19 | 34.8 | 21.6 | 90 | 57 | 1 | 8 | ------ | Ω° a. ↯ p. |
| 20 | 33.8 | 22 | 92 | 65 | 1 | 3 | ------ | ↯ p. |
| 21 | 34.9 | 21.5 | 91 | 59 | 0 | 8 | ------ | Ω° a. ↯ p. |
| 22 | 34.8 | 22.1 | 91 | 60 | 5 | 6 | ------ | Ω° a. |
| 23 | 34.1 | 21.6 | 88 | 62 | 0 | 2 | ------ | Ω° a. ↯ p. |
| 24 | 33.4 | 22.2 | 87 | 63 | 9 | 1 | ------ |  |
| 25 | 34.2 | 21.3 | 89 | 62 | 0 | 6 | ------ | Ω° a. |
| 26 | 34.2 | 22 | 83 | 64 | 1 | 10 | ------ | ↯ p. |
| 27 | 33.3 | 20.9 | 81 | 59 | 10 | 5 | ------ | ⩀ p. |
| 28 | 33.8 | 21.4 | 90 | 60 | 4 | 2 | ------ | Ω° a. |
| 29 | 33.8 | 21.6 | 92 | 83 | 1 | 10 | ------ | Ω° a. d² a. p. ⊤ p. |
| 30 | 31.8 | 21.1 | 72 | 67 | 0 | 10 | ------ | d ⌒ p. |
| Mean | 33.7 | 21.5 | 87.5 | 62.3 | 4.3 | 6.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 2.1 |  |

### CUYO.

[$\phi=10°\ 51'$ N; $\lambda=121°\ 01'$ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.5 | 26.4 | 84 | 70 | 9 | 7 | ------ | ⌈↯° a. ⊕ p. |
| 2 | 30.6 | 26.4 | 75 | 66 | 8 | 8 | ------ | Ω a. ⊍ d p. |
| 3 | 30.8 | 26 | 82 | 74 | 8 | 9 | ------ | Ω² a. |
| 4 | 29.8 | 26.3 | 78 | 59 | 9 | 8 | ------ | ⊍² p. |
| 5 | 30.3 | 25.3 | 77 | 61 | 9 | 8 | 2.5 | Ω a. ⊕ ⊍ p. |
| 6 | 31.3 | 21.9 | 96 | 62 | 9 | 9 | ------ | ● a. |
| 7 | 31.4 | 25.6 | 86 | 60 | 9 | 9 | ------ | Ω a. |
| 8 | 31.8 | 23.4 | 95 | 69 | 9 | 9 | ------ | Ω² ≡° a. |
| 9 | 30.6 | 22.4 | 95 | 75 | 9 | 7 | ------ | Ω² ≡° a. ⊕ p. |
| 10 | 30.3 | 25.6 | 84 | 67 | 8 | 3 | ------ | Ω a. |
| 11 | 29.5 | 25.4 | 72 | 57 | 9 | 6 | ------ | Ω° a. |
| 12 | 31.1 | 25 | 71 | 60 | 8 | 6 | ------ | Ω° a. |
| 13 | 30.4 | 25.8 | 79 | 67 | 9 | 5 | 2 | Ω a. |
| 14 | 30 | 24.5 | 85 | 71 | 10 | 5 | ------ | ● a. ↯ p. |
| 15 | 30.1 | 26 | 81 | 71 | 10 | 7 | ------ | Ω a. ↯ p. |
| 16 | 30.9 | 26.4 | 86 | 69 | 8 | 3 | ------ | Ω a. ↯ p. |
| 17 | 30.2 | 26.4 | 86 | 71 | 9 | 8 | ------ | Ω° a. ↯ p. |
| 18 | 30.5 | 26 | 86 | 67 | 8 | 8 | ------ | Ω a. |
| 19 | 30 | 26 | 82 | 73 | 8 | 3 | ------ | Ω a. |
| 20 | 30.4 | 26 | 86 | 71 | 7 | 8 | ------ | Ω a. |
| 21 | 31.2 | 26.3 | 83 | 69 | 8 | 8 | ------ | Ω a. |
| 22 | 30.8 | 26.2 | 86 | 71 | 8 | 7 | ------ | Ω a. |
| 23 | 30.4 | 26.1 | 84 | 71 | 8 | 6 | ------ | Ω° a. |
| 24 | 30.8 | 26.1 | 87 | 70 | 8 | 9 | ------ | Ω a. ⊕ p. |
| 25 | 30.4 | 26.4 | 88 | 71 | 9 | 7 | ------ | Ω a. ⊕ p. |
| 26 | 30.1 | 26.2 | 84 | 67 | 8 | 3 | ------ | Ω a. |
| 27 | 29.6 | 25.7 | 79 | 69 | 8 | 8 | ------ | Ω a. |
| 28 | 29.9 | 25.5 | 85 | 67 | 8 | 4 | ------ | Ω a. |
| 29 | 30 | 26.1 | 86 | 75 | 8 | 8 | ------ | Ω a. ⊕ p. |
| 30 | 29.9 | 25.5 | 78 | 66 | 8 | 7 | ------ | Ω a. |
| Mean | 30.5 | 25.6 | 83.5 | 67.9 | 8.5 | 6.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 4.5 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### GUIUAN.

[$\phi$=11° 03′ N; $\lambda$=125° 43′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.7 | 23.4 | 86 | 76 | 8 | 8 | 1.5 | ϟ² p. |
| 2 | 30.4 | 23.6 | 93 | 72 | 9 | 7 | ------ | ●° a. ∪² p. |
| 3 | 30.3 | 20.9 | 90 | 73 | 9 | 7 | 1.3 | ●° a. p° p. |
| 4 | 30.1 | 23.6 | 86 | 66 | 9 | 8 | ------ | ◯² a. ∪ p. |
| 5 | 29.9 | 23.3 | 83 | 68 | 7 | 9 | ------ | ◯² a. p. ↙° ∪² p. |
| 6 | 29.3 | 23.8 | 82 | 72 | 9 | 9 | ------ | ∪² p. |
| 7 | 29.4 | 25.8 | 80 | 75 | 9 | 10 | ------ | |
| 8 | 31.2 | 23 | 90 | 71 | 9 | 8 | ------ | ◯² a. ϟ ∪² p. |
| 9 | 30.1 | 22.2 | 97 | 73 | 3 | 3 | 5.3 | ⌒² p. |
| 10 | 29.3 | 22.6 | 87 | 70 | 10 | 7 | ------ | ● a. |
| 11 | 29.2 | 24.1 | 65 | 62 | 1 | 2 | ------ | |
| 12 | 29.7 | 18.3 | 98 | 77 | 1 | 6 | 8.4 | Ω² a. |
| 13 | 29.4 | 23.6 | 94 | 87 | 7 | 8 | 28.9 | ● d a. ●° ϟ° p. |
| 14 | 29.6 | 23.2 | 88 | 93 | 9 | 10 | 23.6 | ●² a. ● ⊤ p. |
| 15 | 30.2 | 23.9 | 91 | 94 | 8 | 9 | 22.6 | ☈ ● a. ● ϟ p. |
| 16 | 30.4 | 24.3 | 90 | 78 | 4 | 5 | 8.1 | d° a. ● ⊤ d p. |
| 17 | 29.6 | 22.9 | 87 | 89 | 9 | 9 | 9.3 | ⊤ ⌒ a. ● a. p. |
| 18 | 30.3 | 23.3 | 97 | 80 | 9 | 8 | 28.4 | ● a. |
| 19 | 29.9 | 22.7 | 92 | 80 | 2 | 4 | 2 | ● a. p. |
| 20 | 29.7 | 23.9 | 90 | 79 | 5 | 4 | ------ | ⌒° a. ⌒² d° p. |
| 21 | 30.1 | 24.8 | 90 | 77 | 1 | 3 | 1 | |
| 22 | 30.3 | 24.3 | 92 | 78 | 7 | 4 | 1.3 | p a. |
| 23 | 30.6 | 22 | 97 | 77 | 2 | 6 | 2.5 | Ω° ●° a. |
| 24 | 31.2 | 21.6 | 98 | 76 | 2 | 5 | 2.5 | Ω² a. d p. |
| 25 | 30.2 | 22.5 | 98 | 80 | 6 | 6 | 24.2 | ● a. d p p. |
| 26 | 30.1 | 22.9 | 92 | 73 | 8 | 2 | 1.1 | ●² a. ●° p. |
| 27 | 30.1 | 24.3 | 79 | 75 | 3 | 5 | ------ | ϟ² p. |
| 28 | 29.9 | 21.6 | 96 | 77 | 5 | 6 | 1.8 | p p. |
| 29 | 30 | 22.7 | 95 | 74 | 6 | 3 | 5.6 | p ϟ° p. |
| 30 | 29.4 | 23.3 | 95 | 78 | 10 | 7 | 15.3 | ● a. p. p° p. |
| Mean | 30 | 23.1 | 89.9 | 76.7 | 6.2 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 194.7 | |

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.5 | 22.7 | 97 | 73 | 7 | 5 | 1.5 | d ●° a. ∪ p. |
| 2 | 30.7 | 22.3 | 97 | 63 | 5 | 5 | 8.2 | Ω ≡ ●° a. ∪ p. |
| 3 | 30.3 | 21.8 | 95 | 67 | 10 | 6 | 11.6 | ● a. p. ⌒° p. |
| 4 | 30.3 | 22.6 | 87 | 62 | 4 | 5 | 2 | ●° ∪ p. |
| 5 | 30.5 | 21.6 | 87 | 62 | 4 | 4 | ------ | ∪ p. |
| 6 | 30.8 | 21.7 | 87 | 65 | 5 | 6 | ------ | Ω° a. |
| 7 | 28.8 | 23.5 | 84 | 74 | 7 | 6 | ------ | d a. ∪° p. |
| 8 | 30.8 | 22.8 | 85 | 65 | 7 | 7 | ------ | Ω° a. ∪ p. |
| 9 | 29.6 | 20.7 | 98 | 76 | 2 | 8 | .3 | Ω ≡ a. d ●° p. |
| 10 | 29.5 | 22 | 94 | 68 | 4 | 5 | 1.8 | Ω a. d p. |
| 11 | 28.5 | 20 | 95 | 91 | 4 | 4 | ------ | Ω ≡° a. |
| 12 | 29.6 | 19 | 97 | 67 | 3 | 4 | .8 | Ω ≡ a. |
| 13 | 28.7 | 23.2 | 96 | 87 | 7 | 8 | 31.5 | ●° ≡ a. ● ϟ p. |
| 14 | 28.5 | 23.2 | 85 | 76 | 8 | 8 | 27.2 | ● a. p. ☈ p. |
| 15 | 28.3 | 23.5 | 93 | 84 | 9 | 9 | 13.4 | ● a. p. ☈ p. |
| 16 | 30.5 | 23.7 | 90 | 74 | 9 | 7 | 53.1 | ● a. ●² p. |
| 17 | 28 | 22.7 | 97 | 93 | 9 | 10 | 16.2 | ● a. p. |
| 18 | 30 | 23 | 93 | 81 | 10 | 8 | 30 | ● a. p. |
| 19 | 29.5 | 23.2 | 97 | 79 | 10 | 8 | 12.2 | ● a. p. |
| 20 | 29.9 | 23.5 | 98 | 75 | 9 | 7 | 18.3 | ● ⌒ a. p. d p. |
| 21 | 30.4 | 22.7 | 97 | 77 | 8 | 7 | 30.7 | ● a. p. |
| 22 | 29.8 | 23 | 98 | 76 | 8 | 6 | 3.8 | ● a. p. |
| 23 | 30.7 | 23.4 | 97 | 76 | 7 | 5 | 4.1 | ≡ ⌒ a. ● a. p. |
| 24 | 30.4 | 23 | 97 | 75 | 6 | 6 | 11.9 | ● a. p. |
| 25 | 29.3 | 23.5 | 97 | 83 | 7 | 6 | 51.8 | ●² a. ● a. p. |
| 26 | 29.7 | 22.6 | 95 | 78 | 10 | 6 | 9.4 | ⌒ a. ● a. p. |
| 27 | 30.2 | 23.1 | 97 | 72 | 6 | 5 | 4.1 | ⊖ p. |
| 28 | 30.5 | 23.3 | 97 | 75 | 6 | 6 | 34.8 | ≡ a. ●° a. p. ∪ p. |
| 29 | 29.5 | 22.8 | 97 | 74 | 9 | 5 | 22.9 | ≡ ●² a. ∪ ●° p. |
| 30 | 29.9 | 23.7 | 90 | 76 | 9 | 8 | 5.3 | ● ☈ a. |
| Mean | 29.8 | 22.6 | 93.8 | 74.8 | 7 | 6.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 406.9 | |

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31.6 | 23.2 | 98 | ------ | 8 | 8 | ------ | |
| 2 | 29.6 | 24.2 | 96 | 86 | 9 | 9 | 2 | |
| 3 | 30.5 | 24 | 92 | 80 | 10 | 9 | ------ | |
| 4 | 29 | 23.8 | 88 | 81 | 10 | 10 | ------ | |
| 5 | 29.2 | 24.6 | 86 | 83 | 10 | 10 | ------ | |
| 6 | 29 | 25 | 93 | 86 | 10 | 9 | ------ | |
| 7 | 28.2 | 25 | 95 | 87 | 10 | 10 | ------ | |
| 8 | 29.8 | 24.6 | 93 | 82 | 10 | 9 | ------ | |
| 9 | 30.8 | 23.6 | ------ | 81 | 10 | 7 | ------ | |
| 10 | 31 | 23.6 | 93 | 79 | 6 | 8 | ------ | |
| 11 | 30.2 | 23.8 | 91 | 81 | 8 | 4 | ------ | |
| 12 | 28.4 | 22 | 93 | 96 | 7 | 9 | .3 | |
| 13 | 30.2 | 23.5 | 98 | 78 | 8 | 6 | 1.8 | |
| 14 | 31 | 24.5 | 92 | 82 | 7 | 9 | 1.3 | |
| 15 | 31 | 24 | 99 | 84 | 6 | 9 | 25.9 | |
| 16 | 29.2 | 22.6 | 97 | 97 | 10 | 10 | 18.6 | |
| 17 | 30.8 | 22.6 | 100 | ------ | 10 | 4 | 21.8 | |
| 18 | 29.4 | 22.8 | 92 | 85 | 10 | 9 | 17.5 | |
| 19 | 30 | 23 | 93 | 83 | 8 | 8 | ------ | |
| 20 | 28.4 | 24 | 97 | 87 | 9 | 6 | 14.8 | |
| 21 | 30 | 23.6 | 100 | 82 | 8 | 8 | 4.1 | |
| 22 | 30.5 | 24.5 | 92 | ------ | 8 | 6 | ------ | |
| 23 | 29.5 | 23.6 | 98 | 85 | 8 | 9 | ------ | |
| 24 | 28.6 | 24.8 | 98 | 92 | 8 | 6 | .8 | |
| 25 | 30.5 | 24.4 | 97 | 79 | 9 | 8 | ------ | |
| 26 | 30.6 | 24.8 | 92 | 82 | 4 | 4 | ------ | |
| 27 | 30 | 24.6 | 90 | 85 | 10 | 4 | ------ | |
| 28 | 29.2 | 25 | 93 | 86 | 9 | 8 | ------ | |
| 29 | 30.5 | 25.2 | 97 | 79 | 9 | 6 | .5 | |
| 30 | 25.6 | 25 | 95 | 92 | 9 | 10 | 6.1 | |
| Mean | 29.7 | 24 | 94.4 | 84.4 | 8.6 | 7.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 115.5 | |

### ROMBLON.

[$\phi$=12° 35′ N; $\lambda$=122° 16′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.6 | 24.4 | 85 | 72 | 9 | 4 | ------ | |
| 2 | 32 | 23.5 | 97 | 66 | 8 | 8 | .8 | p p. |
| 3 | 32.9 | 24.4 | 86 | 67 | 9 | 9 | ------ | |
| 4 | 30.8 | 23.4 | 79 | 57 | 9 | 9 | ------ | ⊖ ∪ p. |
| 5 | 31.4 | 23.7 | 71 | 64 | 8 | 8 | ------ | ⊖ ∪ p. |
| 6 | 31.2 | 21 ? | 80 | 61 | 9 | 9 | ------ | ⊖ ∪ p. |
| 7 | 31.3 | 22.9 | 91 | 74 | 9 | 10 | ------ | |
| 8 | 31.8 | 21.9 | 95 | 65 | 10 | 7 | ------ | Ω a. ⊖ p. |
| 9 | 31.3 | 24.1 | 84 | 69 | 10 | 7 | ------ | |
| 10 | 31.6 | 23.5 | 82 | 63 | 8 | 4 | ------ | ⊖ ∪ p. |
| 11 | 30.8 | 22.9 | 72 | 55 | 3 | 2 | ------ | |
| 12 | 32.8 | 21.9 | 81 | 60 | 4 | 9 | ------ | d° p. |
| 13 | 31.6 | 23.4 | 82 | 69 | 10 | 7 | 18.3 | d p a. ● ϟ p. |
| 14 | 32.6 | 23.3 | 82 | 68 | 8 | 5 | ------ | |
| 15 | 31.4 | 23.6 | 85 | 78 | 8 | 7 | 7.6 | ● a. p. ☈² p° p. |
| 16 | 31 | 24.3 | 86 | 73 | 9 | 4 | 6.1 | p° ● a. p. ☈ p. |
| 17 | 31.6 | 24 | 93 | 70 | 8 | 4 | 6.1 | ● a. p. ⊤ p. |
| 18 | 31.5 | 23 | 91 | 73 | 8 | 7 | 1 | p d ● a. |
| 19 | 31.8 | 24 | 85 | 70 | 5 | 2 | 1.3 | p ☈° p. |
| 20 | 32.8 | 24 | 93 | 70 | 7 | 3 | 3.1 | d a. p a. p. ● p. |
| 21 | 30.9 | 23.8 | 90 | 73 | 8 | 3 | 3.6 | p° a. ϟ ● p. |
| 22 | 32.7 | 24.1 | 90 | 68 | 10 | 1 | ------ | |
| 23 | 33.1 | 23.4 | 96 | 67 | 9 | 2 | .3 | Ω a. |
| 24 | 32.5 | 22.8 | 96 | 68 | 10 | 8 | 21.6 | ● a. p. p° p. |
| 25 | 31.2 | 23.7 | 96 | 76 | 9 | 9 | 4.4 | ● p° a. p p. |
| 26 | 32.3 | 24 | 87 | 63 | 10 | 1 | ------ | |
| 27 | 32 | 22.9 | 88 | 71 | 9 | 8 | .5 | ● p. |
| 28 | 31.8 | 22.9 | 94 | 68 | 8 | 7 | ------ | |
| 29 | 32.6 | 24 | 90 | 70 | 10 | 8 | ------ | Ω a. |
| 30 | 31.6 | 23.3 | 87 | 87 | 10 | 10 | 5.9 | d p p. |
| Mean | 31.8 | 23.4 | 87.1 | 68.5 | 8.4 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 80.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.2 | 23.4 | 98 | 73 | 8 | 6 | 3.3 | p a. d ⊕ ↯ p. |
| 2 | 31.8 | 23.4 | 90 | 85 | 9 | 8 | 10.2 | ● a. d p ⊕ ⊎ p. |
| 3 | 30.5 | 23.3 | 90 | 74 | 10 | 9 | 2.5 | ● a. ⊕ ⊎ d p. |
| 4 | 30.4 | 24.6 | 73 | 81 | 9 | 9 | 1.6 | d a. ● p. |
| 5 | 29.2 | 23.9 | 81 | 77 | 9 | 10 | ------ | d p° p. |
| 6 | 28.5 | 24.2 | 83 | 82 | 9 | 10 | 13.5 | ↙° a. p. p ●° p. |
| 7 | 28.3 | 23.6 | 98 | 97 | 10 | 10 | 12.8 | ↙° a. ● a. p. |
| 8 | ------ | 23.6 | 91 | 79 | 9 | 9 | ------ | ● ◯ a. p p. |
| 9 | 29 ? | 23.4 | 97 | 70 | 9 | 9 | ------ | d a. p. |
| 10 | 30.8 | 22.2 | 87 | 64 | 3 | 6 | ------ | Ω d a. |
| 11 | 30.4 | 22.8 | 87 | 62 | 3 | 4 | 2.8 | Ω a. ●° p. |
| 12 | 30.6 | 20.4 | 99 | 79 | 10 | 6 | 10.1 | ● a. d p. |
| 13 | 29.2 | 22.9 | 86 | 79 | 4 | 6 | 12.9 | ● a. p. ↯ p. |
| 14 | 30.1 | 23.3 | 87 | 78 | 7 | 8 | .1 | ⌈↯ p. |
| 15 | 30 | 23.8 | 95 | 90 | 9 | 9 | 17.6 | d a. ● a. p. ⊤ ↯ |
| 16 | 28.7 | 23.3 | 93 | 89 | 9 | 9 | 20.8 | ⌈↯ a. d ● a. p. |
| 17 | 28.4 | 23.6 | 92 | 91 | 9 | 9 | 30.5 | d a. ●² p. |
| 18 | 30.3 | 23.6 | 97 | 97 | 10 | 9 | 25.6 | ● a. p. ↯ p. |
| 19 | 29.8 | 24 | 98 | 81 | 8 | 4 | 18.1 | ● ⌒² a. p. d p. |
| 20 | 29.9 | 23.8 | 97 | 82 | 8 | 6 | 53.5 | ⌒ a. ● a. p. d p. |
| 21 | 29.5 | 23.7 | 98 | 82 | 8 | 6 | 4.9 | ●² ⌒ a. d ●° p. |
| 22 | 30.1 | 24.7 | 97 | 78 | 7 | 8 | 10.9 | p a. d ● p. |
| 23 | 31.2 | 23.9 | 98 | 78 | 7 | 5 | 9.3 | ●° a. ● a. p. d p. |
| 24 | 30.6 | 23.8 | 99 | 88 | 9 | 8 | 95.2 | ● a. p. ●° ⌒ p. |
| 25 | 30.2 | 22.3 | 98 | 87 | 10 | 9 | 31.7 | ●² a. d p. |
| 26 | ------ | 24.6 | 88 | 77 | 7 | 8 | 5.1 |  |
| 27 | 30.2 | 23.1 | 97 | 76 | 4 | 5 | 3 | ● a. d ●° a. p. |
| 28 | 30.8 | 24 | 97 | 89 | 8 | 8 | 23.1 | ⌒ ●° a. p ● p. |
| 29 | 30.5 | 23.9 | 92 | 81 | 9 | 5 | 44.7 | ● a. d a. p. |
| 30 | 30.4 | 23.2 | 99 | 95 | 10 | 9 | 11.7 | ●² ⊤ a. ● a. p. |
| Mean | 30 | 23.5 | 92.7 | 81.4 | 8 | 7.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 475.5 |  |

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 30.6 | 24.2 | 97 | 78 | 9 | 8 | 2.8 | ● a. d p. |
| 2 | 30.5 | 21.9 | 96 | 85 | 9 | 10 | 37.1 | d ●° a. d ● ⌒ p. |
| 3 | 29.9 | 22.3 | 95 | 79 | 7 | 10 | 2.8 | ● a. d p. |
| 4 | 29.6 | 22.5 | 89 | 70 | 10 | 10 | 1.3 | ⊎ d p. |
| 5 | 30.5 | 22.4 | 87 | 65 | 10 | 8 | ------ |  |
| 6 | 30.8 | 23.4 | 91 | 76 | 10 | 10 | 2 | d p. |
| 7 | 26 | 23.3 | 94 | 96 | 10 | 10 | 5.6 | d a. p. |
| 8 | 29.9 | 21.6 | 93 | 74 | 9 | 10 | ------ |  |
| 9 | 29.3 | 22.8 | 97 | 80 | 10 | 10 | ------ |  |
| 10 | 29.9 | 23.8 | 87 | 74 | 9 | 8 | ------ |  |
| 11 | 29.7 | 20 | 95 | 67 | 7 | 7 | ------ |  |
| 12 | 28.6 | 21.5 | 90 | 92 | 8 | 10 | 1.5 |  |
| 13 | 30.4 | 23.5 | 98 | 82 | 7 | 8 | 4.6 | d a. ●° p. |
| 14 | 29.7 | 24.1 | 90 | 82 | 8 | 10 | 10.2 | ●° a. |
| 15 | 29.3 | 23.6 | 93 | 97 | 9 | 10 | 24.6 | ● a. p. ⌈↯ p. |
| 16 | 27.3 | 23.7 | 89 | 98 | 10 | 10 | 7.3 | ● a. ⊤ d p. |
| 17 | 30 | 25.2 | 93 | 86 | 10 | 10 | 4.1 | d a. p. |
| 18 | 29.3 | 23.7 | 98 | 82 | 10 | 10 | 7.9 | ●° a. |
| 19 | 30 | 24.3 | 96 | 84 | 10 | 10 | 32.3 | d° a. ● p. |
| 20 | 30 | 23.9 | 96 | 91 | 10 | 10 | 13 | ● a. p. d p. |
| 21 | 29.5 | 24.2 | 98 | 85 | 10 | 10 | 13.5 | ● a. p. |
| 22 | 30.3 | 24.1 | 94 | 85 | 8 | 10 | ------ | ● a. |
| 23 | 30.8 | 23.3 | 97 | 79 | 8 | 10 | 7.6 | d p. |
| 24 | 30 | 24.3 | 99 | 97 | 10 | 10 | 23.1 | d a. p. ● p. |
| 25 | 28.1 | 23 | 98 | 86 | 10 | 10 | 3 | ● d a. |
| 26 | 30 | 24.3 | 92 | 80 | 9 | 8 | 6.4 |  |
| 27 | 29.4 | 22.2 | 97 | 87 | 9 | 8 | 13.9 | ● a. p. |
| 28 | 29.2 | 23.4 | 96 | 84 | 10 | 10 | 10.9 | ● p. |
| 29 | 29.6 | 23 | 98 | 81 | 8 | 7 | 3.6 | ● a. |
| 30 | 26 | 23.4 | 97 | 97 | 10 | 10 | 25.4 | ●° a. ● a. p. |
| Mean | 29.5 | 23.2 | 94.3 | 83.3 | 9.1 | 9.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 264.5 |  |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 28 | 25 | 92 | 84 | 10 | 10 | ------ |  |
| 2 | 29 | 25.4 | 84 | 80 | 10 | 10 | 8.9 |  |
| 3 | 30.6 | 24 | 84 | 68 | 10 | 10 | ------ |  |
| 4 | ------ | ------ | 84 | 72 | 10 | 10 | ------ |  |
| 5 | 28.2 | 24 | ------ | 84 | ------ | 10 | 8.9 |  |
| 6 | 28.4 | 24.6 | 87 | 76 | 10 | 10 | 1.3 |  |
| 7 | 27.6 | 24.6 | 92 | 92 | 10 | 10 | 3.8 |  |
| 8 | 30.4 | 23.6 | 84 | 64 | 10 | 10 | ------ |  |
| 9 | 29.8 | 25.4 | 84 | 71 | 10 | 10 | ------ |  |
| 10 | 29.2 | 23 | 83 | 69 | 10 | 10 | ------ |  |
| 11 | 29 | 25.6 | 84 | 75 | 10 | 7 | ------ |  |
| 12 | 29.4 | 25.6 | 84 | 73 | 8 | 6 | ------ |  |
| 13 | 29.2 | 24 | 84 | 70 | 6 | 10 | 1.3 |  |
| 14 | 29.2 | 25.2 | 84 | 71 | 6 | 10 | ------ |  |
| 15 | 29.6 | 25 | 84 | 68 | 7 | 6 | ------ |  |
| 16 | 30.4 | 25.6 | 84 | 71 | 7 | 8 | 2.5 |  |
| 17 | 30 | 25 | 84 | 71 | 6 | 7 | 7.6 |  |
| 18 | 29.6 | 25 | 88 | 68 | 8 | 6 | 6.4 |  |
| 19 | 29.4 | 25 | 87 | 72 | 7 | 8 | 8.9 |  |
| 20 | 28.8 | 24.8 | 84 | 73 | 7 | 8 | 5 |  |
| 21 | 28.4 | 23.4 | 84 | 88 | 4 | 10 | 1.3 |  |
| 22 | 28 | 22.4 | 83 | 84 | 10 | 10 | 19 |  |
| 23 | 30 | 23 | 84 | 68 | 10 | 10 | ------ |  |
| 24 | 29.4 | 22 | 84 | 70 | 3 | 7 | ------ |  |
| 25 | 28.4 | 25 | 84 | 77 | 4 | 4 | 2.5 |  |
| 26 | 29.2 | 25 | 84 | 72 | 10 | 10 | 7.6 |  |
| 27 | 29 | 25 | 88 | 74 | 10 | 8 | 5.1 |  |
| 28 | 29 | 25.4 | 87 | 76 | 8 | 7 | ------ |  |
| 29 | 29 | 24.4 | 84 | 73 | 10 | 8 | 1.3 |  |
| 30 | 29 | 24 | 84 | 77 | 7 | 10 | 5.9 |  |
| Mean | 29.1 | 24.5 | 85.1 | 74.4 | 8.2 | 8.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 97.3 |  |

### CALAPAN.

[$\phi$=13° 25′ N; $\lambda$=121° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.9 | 23.5 | 97 | 65 | 10 | 7 | ------ |  |
| 2 | 32 | 21.4 | 91 | 60 | 10 | 7 | 3.3 |  |
| 3 | 31 | 22.5 | 96 | 74 | 10 | 10 | .3 | ●° p d a. |
| 4 | 30.5 | 24.6 | 70 | 60 | 10 | 10 | ------ |  |
| 5 | 33 | 20.6 | 95 | 54 | 10 | 8 | ------ |  |
| 6 | 31.4 | 19.5 | 96 | 59 | 10 | 10 | ------ |  |
| 7 | 32.1 | 22.5 | 78 | 75 | 10 | 10 | 2.8 | ● p. |
| 8 | 29.6 | 23.2 | 96 | 81 | 10 | 10 | 116.1 | ●² p. |
| 9 | 29.9 | 22.6 | 97 | 72 | 10 | 10 | 39.9 | ● a. ●° p. |
| 10 | 29.5 | 22.6 | 88 | 72 | 10 | 10 | ------ |  |
| 11 | 31 | 23 | 84 | 52 | 10 | 1 | ------ |  |
| 12 | 31.2 | 22 | 90 | 59 | 10 | 5 | ------ |  |
| 13 | 31 | 23.5 | 89 | 71 | 10 | 10 | ------ | ●° p. |
| 14 | 31.8 | 24.5 | 80 | 70 | 10 | 5 | ------ |  |
| 15 | 31.1 | 22.9 | 91 | 75 | 10 | 4 | ------ | ●° a. ⌈↯ p. |
| 16 | 31.5 | 25 | 84 | 71 | 10 | 10 | ------ | ●° a. |
| 17 | 30.1 | 24.3 | 88 | 78 | 10 | 9 | ------ |  |
| 18 | 31 | 25 | 92 | 75 | 7 | 10 | .3 | ●° a. |
| 19 | 31.7 | 23.2 | 92 | 86 | 5 | 10 | 9.1 | p° d p. |
| 20 | 30.6 | 23.6 | 95 | 69 | 10 | 10 | .3 | d a. |
| 21 | 31.1 | 24.7 | 89 | 75 | 10 | 7 | ------ |  |
| 22 | 31 | 25.4 | 82 | 71 | 6 | 2 | ------ |  |
| 23 | 30.7 | 22.4 | 97 | 72 | 9 | 2 | ------ |  |
| 24 | 32.5 | 22.9 | 95 | 64 | 10 | 8 | ------ | ●° a. |
| 25 | 31.2 | 24 | 93 | 72 | 10 | 10 | ------ |  |
| 26 | 31 | 23.9 | 82 | 65 | 10 | 7 | ------ |  |
| 27 | 31.9 | 21.2 | 90 | 62 | 8 | 4 | ------ |  |
| 28 | 30.7 | 22.2 | 96 | 72 | 6 | 4 | ------ |  |
| 29 | 30.8 | 22.2 | 96 | 67 | 7 | 2 | ------ |  |
| 30 | 31 | 21.8 | 93 | 68 | 10 | 9 | 14 | d° a. ● p. |
| Mean | 31.1 | 23 | 90.1 | 68.9 | 9.3 | 7.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 186.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 33.4 | 22.2 | 94 | 55 | 6 | 8 | ------ | p° a. p. |
| 2 | 31.5 | 22 | 87 | 68 | 9 | 10 | 0.5 | d ◯ a. p° ⌒ ⊕ p. |
| 3 | 32 | 22.8 | 80 | 70 | 10 | 10 | 1.5 | d ⊕ ↯° p. |
| 4 | 31.1 | 20.4 | 86 | 70 | 9 | 10 | .8 | ◯ a. p° ↯° p. |
| 5 | 30.8 | 20.4 | 79 | 64 | 10 | 10 | 11.2 | ↯° a. p. p° p. |
| 6 | 27.1 | 23 | 91 | 89 | 10 | 10 | 41.3 | ↯° ● a. p. |
| 7 | 27.3 | 23 | 91 | 84 | 10 | 10 | 27.2 | ↯° ● a. p. |
| 8 | 30 | 22.2 | 81 | 65 | 10 | 10 | .1 | d a. |
| 9 | 30 | 22.2 | 93 | 82 | 10 | 10 | .8 | p a. |
| 10 | 29.8 | 20.5 | 87 | 68 | 4 | 9 | ------ |  |
| 11 | 30.9 | 18 | 77 | 49 | 4 | 2 | ------ | Ω a. |
| 12 | 28.4 | 20 | 75 | 73 | 10 | 10 | 4.9 | Ω ⌒ a. d° a. p. |
| 13 | 31 | 22.6 | 90 | 66 | 10 | 7 | .2 | ●° a. p° ⋦ p. |
| 14 | 31 | 22.8 | 80 | 63 | 6 | 8 | 1.4 | p° ⌒ a. |
| 15 | 31 | 23 | 83 | 79 | 8 | 10 | 5.1 | ●° d° a. ↯° ● ⋦ p |
| 16 | 31.5 | 24 | 85 | 67 | 7 | 8 | 2.1 | p° a. p. ⌒ p. |
| 17 | 31.1 | 23.5 | 82 | 70 | 9 | 8 | 3.8 | p a. p. ● p. |
| 18 | 31.5 | 23.5 | 83 | 62 | 9 | 7 | .4 | p° a. |
| 19 | 31.5 | 23 | 87 | 67 | 8 | 9 | 1.9 | p d° ⌒ a. ●° p. |
| 20 | 31.6 | 22.5 | 90 | 70 | 4 | 8 | 6.7 | d° a. ● a. p. d p. |
| 21 | 30.8 | 24 | 88 | 79 | 8 | 10 | 1.8 | d° ●° a. ⌒ a. p. |
| 22 | 32 | 21.5 | 95 | 68 | 8 | 6 | ------ | p° a. |
| 23 | 31.5 | 21.5 | 96 | 68 | 4 | 6 | ------ | Ω² a. |
| 24 | 32.5 | 22.6 | 91 | 69 | 8 | 9 | ------ | Ω a. |
| 25 | 31 | 23.2 | 79 | 64 | 10 | 10 | ------ | p° a. |
| 26 | 32.2 | 21 | 89 | 61 | 4 | 7 | ------ | Ω a. |
| 27 | 30.6 | 20.6 | 94 | 64 | 4 | 7 | 1.5 | Ω ●° a. |
| 28 | 32.5 | 20.8 | 96 | 69 | 5 | 9 | .5 | Ω d² a. p° p. |
| 29 | 32.8 | 22 | 95 | 56 | 7 | 7 | ------ | Ω d° ⌒² a. ⊕ p. |
| 30 | 27.5 | 22.2 | 83 | 80 | 10 | 10 | 23.7 | ● a. p. ⊕ p. |
| Mean | 30.9 | 22 | 86.9 | 68.6 | 7.7 | 8.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 137.4 |  |

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 32.4 | 23.5 | 90 | 65 | 9 | 8 | ------ |  |
| 2 | 30.5 | 21 | 88 | 72 | 9 | 9 | ------ | ⊕ p. |
| 3 | 31.2 | 22.6 | 91 | 67 | 8 | 9 | 0.5 | d ⊕ p. |
| 4 | 30 | 22.2 | 81 | 61 | 8 | 9 | .7 | ●° p. |
| 5 | 30 | 20.7 | 89 | 68 | 9 | 9 | .1 | p p. |
| 6 | 29.7 | 21.7 | 86 | 68 | 10 | 10 | 1.3 | ●° p. |
| 7 | 26.5 | 22 | 95 | 81 | 10 | 10 | 5.2 | ●° d p. |
| 8 | 30.1 | 22.6 | 86 | 69 | 10 | 9 | ------ |  |
| 9 | 30.3 | 20.5 | 95 | 68 | 10 | 9 | ------ |  |
| 10 | 30.6 | 19.4 | 96 | 58 | 9 | 7 | ------ |  |
| 11 | 30.1 | 16.5 | 94 | 57 | 3 | 7 | ------ |  |
| 12 | 31.1 | 15 | 97 | 65 | 3 | 9 | ------ |  |
| 13 | 32 | 19.1 | 88 | 61 | 10 | 8 | ------ |  |
| 14 | 31.6 | 21.5 | 85 | 60 | 4 | 8 | 1 |  |
| 15 | 32.2 | 22.2 | 97 | 75 | 8 | 8 | ------ | ●° a. |
| 16 | 31.6 | 22.9 | 90 | 70 | 7 | 8 | 1 | d p. |
| 17 | 32.4 | 22.5 | 97 | 89 | 8 | 9 | 1.8 | ⌒ a. ●° p. |
| 18 | 31.3 | 19.9 | 95 | 66 | 7 | 8 | ------ |  |
| 19 | 31.7 | 21.3 | 97 | 68 | 5 | 7 | ------ |  |
| 20 | 33.4 | 21.6 | 97 | 74 | 8 | 9 | 1.1 | d p. |
| 21 | 33.4 | 21.6 | 95 | 82 | 9 | 9 | .5 | d p. |
| 22 | 31.6 | 19.3 | 96 | 68 | 3 | 9 | ------ |  |
| 23 | 31.4 | 19.4 | 98 | 66 | 4 | 6 | ------ |  |
| 24 | 31.3 | 19.2 | 98 | 69 | 8 | 8 | ------ | ≡° a. |
| 25 | 31 | 21.6 | 97 | 68 | 9 | 10 | ------ |  |
| 26 | 31 | 20.5 | 95 | 59 | 3 | 8 | ------ |  |
| 27 | 30.6 | 16.4 | 97 | 82 | 6 | 10 | 1 | d p. |
| 28 | 30.7 | 17.7 | 98 | 64 | 7 | 7 | ------ |  |
| 29 | 31.7 | 22.7 | 93 | 62 | 8 | 7 | ------ |  |
| 30 | 28.6 | 20 | 96 | 96 | 6 | 10 | 30.1 | ● p. |
| Mean | 31 | 20.6 | 93.2 | 69.3 | 7.3 | 8.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 44.3 |  |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 34.5 | 20.4 | 94 | 53 | 6 | 6 | ------ |  |
| 2 | 34.8 | 18.8 | 91 | 51 | 5 | 6 | ------ |  |
| 3 | 34.4 | 20.4 | 91 | 70 | 7 | 7 | ------ |  |
| 4 | 31.3 | 18.2 | 93 | 54 | 4 | 6 | ------ |  |
| 5 | 31.2 | 18.4 | 93 | 53 | 6 | 5 | ------ |  |
| 6 | 31 | 18.2 | 94 | 56 | 4 | 6 | ------ |  |
| 7 | 32 | 17 | 91 | 59 | 9 | 7 | ------ |  |
| 8 | 33 | 22 | 95 | 60 | 5 | 6 | ------ |  |
| 9 | 31.8 | 21.5 | 91 | 65 | 4 | 7 | ------ |  |
| 10 | 31.6 | 21.1 | 95 | 55 | 6 | 5 | ------ |  |
| 11 | 32.5 | 19.2 | 91 | 49 | 1 | 5 | ------ |  |
| 12 | 32.4 | 18.8 | 94 | 49 | 1 | 3 | ------ |  |
| 13 | 31.2 | 20.5 | 90 | 58 | 1 | 6 | ------ |  |
| 14 | 32.5 | 21.8 | 83 | 57 | 6 | 6 | ------ |  |
| 15 | 32.4 | 19.7 | 91 | 55 | 2 | 3 | 1.3 | ●° p. |
| 16 | 33 | 23.4 | 90 | 52 | 7 | 6 | ------ |  |
| 17 | 32.3 | 20.6 | 89 | 57 | 6 | 6 | ------ |  |
| 18 | 32 | 22.3 | 86 | 57 | 4 | 7 | .8 | ●° p. |
| 19 | 31.3 | 19.8 | 95 | 63 | 1 | 6 | ------ |  |
| 20 | 30.5 | 21.7 | 93 | 71 | 5 | 7 | .3 | ●° a. |
| 21 | 32.3 | 21.2 | 96 | 61 | 3 | 6 | ------ |  |
| 22 | 33.9 | 21.3 | 93 | 52 | 1 | 3 | ------ |  |
| 23 | 31.9 | 19.4 | 91 | 62 | 2 | 6 | ------ |  |
| 24 | 33.9 | 20.2 | 93 | 53 | 3 | 6 | ------ |  |
| 25 | 34.4 | 20.2 | 91 | 52 | 4 | 6 | ------ |  |
| 26 | 33 | 19.6 | 93 | 53 | 1 | 3 | ------ |  |
| 27 | 33.4 | 19 | 91 | 51 | 2 | 3 | ------ |  |
| 28 | 32.8 | 20 | 89 | 55 | 3 | 6 | ------ |  |
| 29 | 33.4 | 19 | 91 | 46 | 2 | 3 | ------ |  |
| 30 | 34 | 16 | 90 | 46 | 3 | 6 | ------ |  |
| Mean | 32.6 | 20 | 91.6 | 55.8 | 3.8 | 5.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 2.4 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °*C.* | °*C.* | *P. ct.* | *P. ct.* | *0–10.* | *0–10.* | *mm.* |  |
| 1 | 30.5 | 18 | 98 | 68 | 8 | 8 | ------ | Ω ≡ a. |
| 2 | 29 | 17.7 | 97 | 69 | 2 | 7 | ------ |  |
| 3 | 29.6 | 18.8 | 98 | 69 | 2 | 2 | ------ | Ω a. |
| 4 | 30.1 | 18.3 | 98 | 70 | 7 | 2 | ------ |  |
| 5 | 30.6 | 18 | 98 | 68 | 2 | 2 | ------ | ≡ a. |
| 6 | 30.5 | 17.2 | 98 | 68 | 7 | 5 | ------ |  |
| 7 | 30.1 | 17.5 | 98 | 70 | 3 | 8 | ------ | Ω ≡ a. |
| 8 | 29.7 | 17.9 | 98 | 69 | 8 | 8 | ------ | Ω a. |
| 9 | 29 | 17.2 | 98 | 68 | 5 | 7 | ------ |  |
| 10 | 29.2 | 17 | 98 | 70 | 2 | 2 | ------ |  |
| 11 | 29.5 | 17.1 | 98 | 69 | 2 | 8 | ------ | Ω ≡ a. |
| 12 | 29.4 | 17.7 | 97 | 70 | 7 | 6 | ------ | ≡ a. |
| 13 | 29.9 | 17 | 98 | 70 | 7 | 9 | ------ | Ω ≡ a. p° p. |
| 14 | 29.4 | 17.2 | 98 | 70 | 5 | 8 | 2.5 | d ●° p. |
| 15 | 28.6 | 17.4 | 97 | 71 | 2 | 8 | ------ | p° a. d p. |
| 16 | 28.2 | 17.7 | 97 | 70 | 7 | 5 | ------ | d p. |
| 17 | 28.7 | 17 | 98 | 73 | 9 | 9 | 6.8 | ●° p. |
| 18 | 28.2 | 18.1 | 98 | 69 | 10 | 5 | ------ |  |
| 19 | 29.5 | 17.8 | 98 | 70 | 10 | 9 | 4.8 | ●° a. p. |
| 20 | 29 | 18.1 | 98 | 70 | 9 | 7 | ------ | Ω ≡ a. |
| 21 | 29.8 | 17.6 | 97 | 69 | 10 | 8 | 2.5 | p p. |
| 22 | 29 | 18.5 | 98 | 69 | 8 | 7 | ------ |  |
| 23 | 29.9 | 18.8 | 98 | 69 | 2 | 5 | ------ | Ω ≡ a. |
| 24 | 30.4 | 19.2 | 98 | 66 | 2 | 2 | ------ | Ω ≡ a. |
| 25 | 30.7 | 18.9 | 98 | 68 | 2 | 4 | ------ |  |
| 26 | 30.5 | 18.6 | 98 | 68 | 2 | 2 | ------ | Ω ≡ a. |
| 27 | 30 | 18.2 | 98 | 68 | 2 | 7 | ------ |  |
| 28 | 30.2 | 18.5 | 98 | 69 | 5 | 4 | ------ | Ω ≡ a. |
| 29 | 29.6 | 17.6 | 98 | 70 | 2 | 2 | ------ |  |
| 30 | 29 | 18 | 98 | 70 | 2 | 5 | ------ | Ω ≡ a. |
| Mean | 29.6 | 17.9 | 97.8 | 69.2 | 5 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 16.6 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### SANTA CRUZ, LAGUNA.
[φ=14° 18′ N; λ=121° 25′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |
| 2 | 31.1 | 20.7 | 98 | 62 | 7 | 7 | 2.3 | Ω a. ● p. |
| 3 | 30.5 | 22.1 | 97 | 66 | 8 | 4 | ------ | Ω a. d° p. |
| 4 | 30.2 | 21.9 | 82 | 61 | 6 | 4 | ------ |  |
| 5 | 30 | 18.6 | 97 | 55 | 4 | 5 | ------ | Ψ p. |
| 6 | 30.7 | 18.4 | 98 | 63 | 7 | 8 | ------ | Ω a. ◯ a. p. |
| 7 | 30.7 | 21.9 | 94 | 70 | 10 | 9 | ------ |  |
| 8 | 31.2 | 22.1 | 92 | 64 | 10 | 7 | ------ |  |
| 9 | 31.6 | 21.2 | 95 | 70 | 7 | 4 | ------ |  |
| 10 | 29.9 | 21.9 | 91 | 67 | 7 | 4 | ------ |  |
| 11 | 29.7 | 20.2 | 81 | 61 | 5 | 6 | ------ | d° p. |
| 12 | 30 | 19.2 | 95 | 64 | 4 | 4 | ------ | ⌒² a. |
| 13 | 29.8 | 22 | 91 | 64 | 3 | 7 | ------ |  |
| 14 | 30.6 | 23.1 | 81 | 78 | 7 | 8 | ------ | d° a. p. |
| 15 | 30.2 | 21.2 | 92 | 74 | 10 | 5 | 2 | d° ●° p. |
| 16 | 31 | 21.7 | 92 | 75 | 6 | 7 | .3 | d ⌒ a. |
| 17 | 29.6 | 23.1 | 87 | 77 | 5 | 6 | 18.1 | d° a. ● p. |
| 18 | 29.6 | 21 | 97 | 80 | 9 | 6 | 3.6 | d a. ● p. |
| 19 | 29.5 | 22.1 | 92 | 77 | 2 | 5 | .3 | d a. |
| 20 | 29.8 | 21.7 | 91 | 75 | 8 | 7 | .8 | ≡° a. ⌒² p. d a. p. |
| 21 | 29.1 | 22.2 | 92 | 86 | 8 | 9 | .2 | d° ⌒ p. |
| 22 | 31 | 21.8 | 97 | 73 | 2 | 4 | ------ | Ω a. |
| 23 | 31.4 | 19.8 | 100 | 70 | 2 | 4 | ------ | ≡ Ω² a. |
| 24 | 31.5 | 20.2 | 100 | 71 | 3 | 4 | ------ | ≡ Ω² a. |
| 25 | 30.8 | 21 | 98 | 67 | 3 | 3 | ------ | Ω a. |
| 26 | 30.4 | 20.2 | 96 | 71 | 3 | 4 | ------ | Ω a. |
| 27 | 30.2 | 19.2 | 100 | 65 | 2 | 3 | ------ | ≡ Ω² a. ⌒ p. |
| 28 | 31.2 | 18 | 100 | 69 | 2 | 3 | ------ | ≡° Ω² a. |
| 29 | 30.2 | 18.4 | 100 | 68 | 2 | 3 | ------ | ≡° Ω² a. |
| 30 | 30.3 | 17.3 | 100 | 72 | 6 | 6 | ------ | ≡° Ω² a. |
| Mean | 30.4 | 20.8 | 94 | 69.5 | 5.4 | 5.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 27.6[1] |  |

### ANTIPOLO.
[φ=14° 36′ N; λ=121° 10′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 33.3 | 21.3 | 89 | 53 | 8 | 5 | ------ | Ω a. |
| 2 | 32.5 | 19.4 | 85 | 54 | 8 | 6 | ------ | Ω a. |
| 3 | 32.9 | 20.9 | 88 | 55 | 6 | 5 | ------ | Ω² a. Ψ² p. |
| 4 | 31.8 | 19.4 | 85 | 55 | 8 | 6 | ------ | Ω² a. Ψ p. |
| 5 | 31.8 | 18.2 | 76 | 60 | 9 | 7 | ------ | Ω a. Ψ p. |
| 6 | 31.1 | 19.1 | 92 | 52 | 10 | 10 | ------ | Ω° a. Ψ p. |
| 7 | 31.2 | 21.4 | 93 | 57 | 10 | 5 | ------ | Ω a. |
| 8 | 31 | 21.5 | 95 | 67 | 8 | 9 | ------ | Ω° ≡° a. Φ p. |
| 9 | 31.4 | 19.8 | 91 | 63 | 3 | 5 | ------ | Ω a. |
| 10 | 31.5 | 20.4 | 80 | 56 | 7 | 8 | ------ |  |
| 11 | 33.7 | 19.4 | 81 | 63 | 4 | 8 | ------ |  |
| 12 | 31.5 | 18.8 | 87 | 56 | 2 | 4 | ------ | Ω a. |
| 13 | 31.2 | 20.8 | 80 | 61 | 6 | 5 | ------ |  |
| 14 | 31.6 | 21.1 | 74 | 68 | 3 | 9 | ------ |  |
| 15 | 32.2 | 18.7 | 83 | 61 | 4 | 4 | ------ | Ω a. |
| 16 | 32.9 | 22.3 | 88 | 56 | 4 | 4 | ------ | Ω° a. ↯ p. |
| 17 | 31.7 | 20.6 | 83 | 60 | 2 | 6 | 14.7 | ●° p. |
| 18 | 29.5 | 21.6 | 87 | 61 | 7 | 7 | ------ | ●° a. ⌈↯ ⌒° p. |
| 19 | 29.5 | 20.3 | 90 | 69 | 2 | 6 | ------ | Ω² a. ⌈↯ p. |
| 20 | 30.3 | 20 | 87 | 64 | 3 | 6 | ------ | Ω° a. |
| 21 | 32.4 | 20.8 | 94 | 63 | 7 | 6 | ------ | Ω a. |
| 22 | 33.5 | 20.7 | 88 | 56 | 3 | 4 | ------ | Ω² a. |
| 23 | 33 | 19.6 | 96 | 61 | 2 | 4 | ------ | Ω° a. |
| 24 | 33.1 | 19.5 | 90 | 68 | 3 | 6 | ------ | Ω° a. |
| 25 | 34.2 | 20.1 | 90 | 58 | 3 | 3 | ------ | Ω a. Φ p. |
| 26 | 33.3 | 19.9 | 84 | 59 | 2 | 4 | ------ |  |
| 27 | 33.4 | 18.9 | 90 | 54 | 3 | 3 | ------ | Ω² a. |
| 28 | 32.7 | 18.4 | 84 | 63 | 4 | 5 | ------ | Ω° a. |
| 29 | 32.6 | 18.4 | 74 | 70 | 9 | 2 | ------ | Ω a. |
| 30 | 32.6 | 17.7 | 83 | 65 | 3 | 4 | ------ | Ω° a. |
| Mean | 32.1 | 20 | 86.2 | 60.3 | 5.1 | 5.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 14.7 |  |

### IBA.
[φ=15° 20′ N; λ=119° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.6 | 20.5 | 96 | 67 | 3 | 5 | ------ | Ω²≡°a.⌈↯d°p. |
| 2 | 32.6 | 21.2 | 95 | 61 | 4 | 4 | ------ | ≡°a. ↯ p. |
| 3 | 31.5 | 20.2 | 97 | 69 | 3 | 7 | ------ | Ω ≡ ◯° a. |
| 4 | 32.3 | 21.7 | 74 | 65 | 2 | 8 | ------ | ⌒ d Ψ° p. |
| 5 | 30.7 | 20.2 | 74 | 62 | 4 | 10 | ------ | Ψ° p. |
| 6 | 31.6 | 17.5 | 96 | 60 | 10 | 10 | ------ | Ω°a.◯²a.p.Ψ²p. |
| 7 | 31.2 | 18.1 | 96 | 68 | 10 | 10 | ------ | ≡°a.◯²a.p.Ψ²p. |
| 8 | 30 | 19.6 | 95 | 71 | 10 | 10 | ------ | ≡° a. ◯ p. |
| 9 | 30.5 | 21 | 96 | 69 | 10 | 10 | ------ |  |
| 10 | 30.8 | 18.5 | 98 | 70 | 3 | 5 | ------ | Ω ≡ a. |
| 11 | 31.9 | 20.5 | 79 | 58 | 4 | 5 | ------ |  |
| 12 | 30.7 | 16.7 | 95 | 61 | 1 | 4 | ------ | ≡° a. |
| 13 | 31 | 17 | 88 | 64 | 1 | 3 | ------ |  |
| 14 | 31 | 19.3 | 78 | 66 | 1 | 4 | ------ |  |
| 15 | 31.6 | 18.3 | 78 | 64 | 1 | 1 | ------ | ↯° p. |
| 16 | 32.5 | 21.6 | 90 | 64 | 2 | 3 | ------ | ↯ p. |
| 17 | 32.5 | 20.5 | 82 | 56 | 2 | 1 | ------ |  |
| 18 | 32.6 | 22 | 88 | 62 | 9 | 4 | ------ |  |
| 19 | 31.8 | 19.5 | 92 | 62 | 2 | 8 | ------ |  |
| 20 | 32.3 | 18.8 | 94 | 58 | 2 | 4 | ------ |  |
| 21 | 31.5 | 19.7 | 91 | 70 | 5 | 3 | ------ |  |
| 22 | 32 | 19.5 | 94 | 66 | 1 | 3 | ------ | Ω° a. |
| 23 | 31.4 | 18.7 | 96 | 71 | 3 | 3 | ------ | Ω ≡° a. |
| 24 | 31.3 | 19.2 | 96 | 68 | 4 | 2 | ------ | Ω ≡° a. |
| 25 | 31.6 | 18.5 | 96 | 64 | 3 | 2 | ------ | Ω ≡° a. |
| 26 | 33.3 | 18.5 | 96 | 63 | 1 | 4 | ------ | Ω ≡° a. |
| 27 | 30.8 | 18.3 | 95 | 63 | 2 | 2 | ------ | Ω° ≡° a. |
| 28 | 31 | 18 | 94 | 69 | 8 | 4 | ------ | Ω a. |
| 29 | 30.4 | 18 | 98 | 65 | 4 | 3 | ------ | Ω ≡ a. |
| 30 | 30.8 | 17 | 96 | 63 | 1 | 3 | ------ | Ω ≡° a. |
| Mean | 31.5 | 19.3 | 91.1 | 64.6 | 3.9 | 4.8 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### TARLAC.
[φ=15° 30′ N; λ=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 34.8 | 21.8 | 92 | 52 | 2 | 7 | 3.6 | Ω a. |
| 2 | 34 | 21.5 | 96 | 47 | 2 | 3 | ------ | ● ≡° a. |
| 3 | 33.6 | 20.8 | 95 | 48 | 2 | 3 | ------ | Ω a. |
| 4 | 34 | 20.4 | 91 | 48 | 9 | 4 | ------ | Ω a. |
| 5 | 33.6 | 18.8 | 88 | 48 | 4 | 3 | ------ | Ω a. |
| 6 | 32.5 | 18.9 | 85 | 49 | 4 | 4 | ------ | Ω a. |
| 7 | 33 | 20 | 93 | 53 | 9 | 9 | ------ | Ω a. |
| 8 | 32.4 | 20.5 | 95 | 52 | 10 | 10 | ------ | Ω ≡° a. |
| 9 | 33 | 20.8 | 96 | 54 | 4 | 4 | ------ | Ω ≡° a. |
| 10 | 32.3 | 20.8 | 95 | 48 | 3 | 4 | ------ | Ω ≡° a. |
| 11 | 31.5 | 20 | 88 | 60 | 9 | 9 | ------ | Ω a. |
| 12 | 33.3 | 18.8 | 93 | 52 | 7 | 8 | ------ | Ω a. |
| 13 | 32.5 | 18.4 | 92 | 52 | 9 | 7 | ------ | Ω a. |
| 14 | 33.4 | 19 | 95 | 46 | 2 | 2 | ------ | Ω a. |
| 15 | 34.5 | 18.4 | 93 | 50 | 0 | 2 | ------ | Ω a. |
| 16 | 34 | 21.3 | 96 | 43 | 3 | 3 | ------ | Ω ≡° a. |
| 17 | 32.3 | 20 | 91 | 49 | 1 | 4 | ------ | Ω a. |
| 18 | 34 | 20 | 89 | 43 | 3 | 2 | ------ | Ω a. |
| 19 | 34.2 | 20 | 90 | 42 | 2 | 2 | ------ | Ω a. |
| 20 | 34.5 | 19.2 | 91 | 59 | 2 | 9 | ------ | Ω a. |
| 21 | 34.2 | 20.8 | 96 | 49 | 2 | 4 | ------ | Ω ≡° a. |
| 22 | 34.5 | 19 | 95 | 52 | 2 | 3 | ------ | Ω ≡° a. |
| 23 | 33.7 | 19.4 | 93 | 49 | 0 | 3 | ------ | Ω a. |
| 24 | 34.5 | 20.8 | 95 | 45 | 4 | 3 | ------ | Ω ≡° a. |
| 25 | 33.7 | 19.7 | 96 | 47 | 2 | 4 | ------ | Ω ≡° a. |
| 26 | 33.8 | 18.8 | 96 | 46 | 2 | 3 | ------ | Ω ≡° a. |
| 27 | 33.3 | 18.8 | 94 | 49 | 1 | 2 | ------ | Ω a. |
| 28 | 34.1 | 19.2 | 95 | 45 | 3 | 2 | ------ | Ω ≡° a. |
| 29 | 32.8 | 18.3 | 96 | 43 | 2 | 1 | ------ | Ω ≡° a. |
| 30 | 33.5 | 18.4 | 92 | 47 | 0 | 3 | ------ | Ω a. |
| Mean | 33.5 | 19.8 | 93.1 | 48.9 | 3.5 | 4.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 3.6 |  |

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[1] 29 days of observation.

## METEOROLOGICAL DATA, ETC.—Continued.

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 31.1 | 23.1 | 93 | 69 | 10 | 1 | 1 | Ω a. ⊖ ϟ ● p. |
| 2 | 31.1 | 21.5 | 95 | 61 | 10 | 8 | ------ | Ω ≡° a. ψ ϟ p. |
| 3 | 31.1 | 22 | 95 | 61 | 10 | 7 | ------ | Ω ≡° d a. ψ p. |
| 4 | 29.4 | 19.3 | 90 | 60 | 10 | 3 | ------ | Ω a. ⊕ ψ p. |
| 5 | 30.5 | 18.2 | 85 | 48 | 10 | 4 | ------ | Ω° a. ψ p. |
| 6 | 31.8 | 19.1 | 79 | 56 | 10 | 10 | ------ | Ω a. ψ p. |
| 7 | 31.9 | 22.4 | 85 | 62 | 10 | 10 | ------ | Ω a. |
| 8 | 30.4 | 19.4 | 90 | 58 | 10 | 10 | ------ | Ω a. |
| 9 | 29.4 | 21.4 | 94 | 64 | 10 | 9 | .3 | d ● p. |
| 10 | 28.8 | 21.7 | 88 | 56 | 10 | 2 | ------ | Ω a. d p. |
| 11 | 28.8 | 18.6 | 95 | 54 | 10 | 8 | .3 | Ω ≡° a. d a. p. |
| 12 | 28.8 | 21.3 | 92 | 61 | 10 | 10 | ------ | Ω a. |
| 13 | 28.9 | 23 | 85 | 86 | 10 | 10 | .5 | Ω a. d ● a. p. |
| 14 | 28.7 | 19.9 | 95 | 73 | 10 | 7 | 2.3 | Ω ≡° d a. ● a. p. |
| 15 | 29.2 | 19.4 | 95 | 80 | 10 | 10 | 32.8 | Ω$^2$ ≡° a. ●° ↙° p. |
| 16 | 29.4 | 24.1 | 87 | 75 | 10 | 6 | 2.8 | Ω d ● a. ∞ p. |
| 17 | 30.2 | 21.9 | 80 | 71 | 10 | 10 | ------ | d p. |
| 18 | 30.2 | 25.4 | 84 | 71 | 10 | 2 | ------ |  |
| 19 | 30.2 | 21.3 | 95 | 75 | 10 | 10 | 2.5 | Ω ≡ a. d ● p. |
| 20 | 30.2 | 20.1 | 94 | 79 | 10 | 10 | .5 | Ω$^2$ a. d ● p. |
| 21 | 30.1 | 23.7 | 80 | 75 | 10 | 2 | .5 | ● p. |
| 22 | 28.5 | 22.9 | 96 | 72 | 10 | 1 | ------ | d a. |
| 23 | 29.7 | 19.6 | 95 | 77 | 10 | 1 | ------ | Ω$^2$ ≡° a. |
| 24 | 30.7 | 19.7 | 96 | 64 | 10 | 0 | ------ | Ω$^2$ ≡° a. |
| 25 | 30.1 | 21.6 | 96 | 78 | 10 | 6 | ------ | Ω ≡ d a. |
| 26 | 29.4 | 21.5 | 96 | 75 | 10 | 9 | ------ | Ω ≡ a. d ψ p. |
| 27 | 29.6 | 20.4 | 96 | 71 | 10 | 8 | ------ | Ω ≡ a. |
| 28 | 28.7 | 17.9 | 94 | 73 | 10 | 0 | ------ | Ω$^2$ a. |
| 29 | 29.6 | 19 | 95 | 71 | 10 | 8 | ------ | Ω$^2$ ≡$^2$ a. |
| 30 | 29.9 | 20.1 | 94 | 65 | 10 | 1 | ------ | Ω° a. |
| Mean | 29.9 | 21 | 91.1 | 68 | 10 | 6.1 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 43.5 |  |

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N; $\lambda$=120° 19′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.4 | 22 | 93 | 68 | 10 | 4 | ------ | Ω a. ⌈ϟ° p. |
| 2 | 31.5 | 24 | 83 | 59 | 9 | 4 | ------ |  |
| 3 | 31.8 | 21.7 | 93 | 62 | 0 | 4 | ------ | Ω a. |
| 4 | 31.9 | 20.9 | 91 | 56 | 2 | 3 | ------ |  |
| 5 | 31.3 | 20 | 91 | 54 | 10 | 5 | ------ | Ω° a. |
| 6 | 31 | 18.5 | 93 | 61 | 5 | 10 | ------ | Ω a. ψ° p. |
| 7 | 30.1 | 22.2 | 81 | 70 | 10 | 10 | ------ | ○ a. p. ψ p. |
| 8 | 30.2 | 20.3 | 95 | 62 | 10 | 10 | ------ | Ω° a. |
| 9 | 31.5 | 20.5 | 95 | 64 | 10 | 5 | ------ | Ω a. |
| 10 | 30.1 | ------ | 95 | 65 | 0 | 5 | ------ | Ω a. |
| 11 | 30.5 | 19 | 92 | 63 | 10 | 8 | ------ | Ω a. |
| 12 | 30.5 | 18 | 95 | 58 | 10 | 9 | ------ | Ω a. |
| 13 | 30.5 | 18 | 95 | 60 | 10 | 2 | ------ | Ω a. |
| 14 | 30.9 | 19.2 | 95 | 58 | 10 | 1 | ------ | Ω ≡° a. |
| 15 | 31.1 | 19.5 | 95 | 64 | 10 | 2 | ------ | Ω° a. |
| 16 | 31.5 | 19.7 | 95 | 63 | 10 | 2 | ------ | Ω a. |
| 17 | 31.5 | 21.7 | 95 | 65 | 10 | 2 | ------ | Ω ≡° a. |
| 18 | 32.4 | 20.4 | 94 | 58 | 10 | 2 | ------ | Ω a |
| 19 | 31.2 | 20.7 | 96 | 67 | 10 | 2 | ------ | Ω a. |
| 20 | 30.8 | 21.5 | 94 | 68 | 10 | 2 | ------ | Ω a. |
| 21 | 31.6 | 21.6 | 96 | 71 | 6 | 2 | ------ | Ω a. |
| 22 | 31.7 | 20.9 | 94 | 63 | 10 | 1 | ------ | Ω a. |
| 23 | 31.3 | 20.5 | 95 | 67 | 10 | 0 | ------ | Ω° a. |
| 24 | 31 | 22 | 91 | 63 | 10 | 3 | ------ |  |
| 25 | 31.9 | 20.2 | 94 | 63 | 10 | 0 | ------ | Ω a. |
| 26 | 31.7 | 20.4 | 94 | 63 | 10 | 0 | ------ | Ω a. |
| 27 | 31.3 | 20.1 | 95 | 62 | 10 | 1 | ------ | Ω° a. |
| 28 | 30.8 | 20.7 | 91 | 67 | 10 | 3 | ------ | Ω a. |
| 29 | 31.5 | 23.1 | 88 | 61 | 10 | 0 | ------ |  |
| 30 | 31.3 | 20.7 | 93 | 63 | 10 | 0 | ------ |  |
| Mean | 31.2 | 20.6 | 92.9 | 62.9 | 8.7 | 3.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### ECHAGUE.

[$\phi$=16° 41′ N; $\lambda$=121° 39′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 32.8 | 21.3 | 98 | 57 | 4 | 3 | ------ | Ω$^2$ ≡° a. ϟ° p. |
| 2 | 29.3 | 20.7 | 98 | 73 | 4 | 10 | 4.1 | Ω$^2$ ≡° a. ⊕° d$^2$ p. |
| 3 | 29.3 | 22.3 | 98 | 66 | 10 | 9 | 1 | d$^2$ ⊕° a. ⊖$^2$ p. |
| 4 | 28.9 | 19.2 | 97 | 62 | 10 | 6 | ------ | Ω° d° a. ψ° p. |
| 5 | 28.4 | 17.6 | 99 | 65 | 7 | 5 | ------ | Ω$^2$ ≡° d° a. ψ$^2$ p. |
| 6 | 28.3 | 19.6 | 95 | 71 | 10 | 10 | ------ | d° a. |
| 7 | 26.9 | 21.8 | 94 | 71 | 10 | 10 | ------ |  |
| 8 | 29.1 | 20.2 | 98 | 65 | 10 | 9 | ------ | d° a. |
| 9 | 28.1 | 20.4 | 94 | 67 | 10 | 8 | ------ | d° a. |
| 10 | 28.8 | 18 | 98 | 62 | 8 | 6 | ------ | Ω° a. |
| 11 | 28.5 | 17.6 | 97 | 58 | 10 | 3 | ------ | Ω° d° a. |
| 12 | 29.4 | 19.2 | 99 | 62 | 10 | 8 | .3 | d a. d° p. |
| 13 | 29.8 | 18.4 | 98 | 70 | 9 | 10 | ------ | Ω$^2$ a. |
| 14 | 30.9 | 17.5 | 99 | 56 | 10 | 4 | ------ | Ω$^2$ ≡$^2$ a. |
| 15 | 30.3 | 16.6 | 98 | 66 | 2 | 10 | ------ | Ω$^2$ a. |
| 16 | 31.4 | 21.5 | 98 | 57 | 3 | 3 | ------ | Ω$^2$ ≡ a. |
| 17 | 31 | 18.6 | 98 | 58 | 4 | 4 | ------ | Ω$^2$ ≡° a. d° p. |
| 18 | 30.8 | 20.5 | 98 | 67 | 10 | 5 | ------ | Ω° a. |
| 19 | 29.6 | 20.2 | 98 | 66 | 3 | 9 | .3 | Ω$^2$ ≡° a. d$^2$ p. |
| 20 | 30 | 18.7 | 99 | 64 | 5 | 6 | ------ | ≡° d° a. ⌒° p. |
| 21 | 31.2 | 22.4 | 98 | 58 | 10 | 3 | ------ | ⌒° p. |
| 22 | 32.8 | 20.9 | 97 | 52 | 10 | 2 | ------ | Ω$^2$ a. |
| 23 | 32 | 18.4 | 98 | 53 | 6 | 1 | ------ | Ω$^2$ a. |
| 24 | 32.2 | 22.8 | 95 | 52 | 10 | 2 | .3 | Ω° d$^2$ a. |
| 25 | 31.3 | 21.2 | 96 | 56 | 10 | 2 | ------ | Ω° ≡° a. |
| 26 | 31.4 | 20.1 | 97 | 54 | 10 | 3 | ------ | Ω° a. |
| 27 | 32.6 | 19.2 | 97 | 53 | 2 | 2 | ------ | Ω$^2$ a. |
| 28 | 31.4 | 17.1 | 99 | 57 | 8 | 1 | ------ | Ω$^2$ ≡$^2$ a. |
| 29 | 31.5 | 18.9 | 98 | 52 | 8 | 3 | ------ | Ω$^2$ a. |
| 30 | 32.5 | 19.7 | 99 | 53 | 10 | 1 | ------ | Ω$^2$ a. |
| Mean | 30.4 | 19.7 | 97.5 | 60.8 | 7.8 | 5.3 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 6 |  |

### CANDON.

[$\phi$=17° 12′ N; $\lambda$=120° 26′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.5 | 23.7 | 87 | 72 | 1 | 3 | ------ | Ω$^2$ a. ⊤° ϟ p. |
| 2 | 30.2 | 23.4 | 86 | 67 | 6 | 3 | ------ | Ω$^2$ a. |
| 3 | 31 | 22.4 | 84 | 64 | 3 | 0 | ------ | Ω$^2$ a. ψ p. |
| 4 | 30.4 | 22 | 73 | 53 | 2 | 1 | ------ | Ω a. |
| 5 | 29.7 | 20.6 | 71 | 59 | 4 | 4 | ------ | Ω$^2$ a. ψ p. |
| 6 | 30.5 | 21.1 | 70 | 54 | 6 | 10 | ------ | ⊕ ⊖ p. |
| 7 | 28.7 | 22 | 79 | 66 | 10 | 9 | ------ |  |
| 8 | 28.6 | 22 | 81 | 66 | 9 | 10 | ------ | Ω a. |
| 9 | 28.7 | 21.4 | 87 | 69 | 5 | 2 | ------ | Ω a. |
| 10 | 28.1 | 21 | 84 | 63 | 8 | 1 | ------ | Ω a. |
| 11 | 28.1? | 19.5 | 80 | 53 | 3 | 1 | ------ | Ω$^2$ a. |
| 12 | 28.5 | 18 | 80 | 63 | 0 | 1 | ------ | Ω$^2$ a. |
| 13 | 29.5 | 18 | 85 | 66 | 0 | 0 | ------ | Ω$^2$ a. |
| 14 | 29.5 | 20 | 85 | 73 | 0 | 0 | ------ | Ω$^2$ a. |
| 15 | 29.5 | 20.7 | 86 | 74 | 0 | 2 | ------ | Ω$^2$ a. |
| 16 | 30 | 21.2 | 88 | 73 | 0 | 0 | ------ |  |
| 17 | 30.4 | 21.1 | 86 | 77 | 0 | 1 | ------ |  |
| 18 | 30.5 | 21.5 | 88 | 70 | 0 | 2 | ------ |  |
| 19 | 30 | 21.5 | 87 | 70 | 0 | 0 | ------ |  |
| 20 | 29.6 | 21.4 | 89 | 61 | 1 | 0 | ------ |  |
| 21 | 30 | 21.7 | 84 | 63 | 2 | 3 | ------ |  |
| 22 | 30 | 21.7 | 87 | 70 | 0 | 0 | ------ |  |
| 23 | 29.2 | 21.7 | 83 | 65 | 1 | 0 | ------ |  |
| 24 | 28.9 | 21.6 | 87 | 64 | 6 | 1 | ------ |  |
| 25 | 29.1 | 20 | 84 | 64 | 0 | 0 | ------ |  |
| 26 | 29 | 20 | 83 | 70 | 0 | 4 | ------ |  |
| 27 | 29.5 | 21.9 | 88 | 68 | 6 | 1 | ------ |  |
| 28 | 29.5 | 22 | 87 | 66 | 2 | 0 | ------ |  |
| 29 | 29.1 | 21.9 | 87 | 69 | 3 | 4 | ------ |  |
| 30 | 29.1 | 21.9 | 87 | 65 | 1 | 4 | ------ |  |
| Mean | 29.5 | 21.2 | 83.8 | 65.9 | 2.6 | 2.2 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### LAOAG.

[$\phi$=18° 12′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 31.8 | 22.4 | 95 | 61 | 0 | 0 | ------ | Ω² ≡° a. |
| 2 | 33.3 | 20.1 | 95 | 49 | 0 | 4 | ------ | Ω² ≡° a. |
| 3 | 31.3 | 23.5 | 73 | 52 | 0 | 1 | ------ |  |
| 4 | 31.4 | 19.7 | 91 | 43 | 0 | 1 | ------ | Ω² a. |
| 5 | 31.3 | 20.7 | 78 | 55 | 1 | 1 | ------ | Ω a. ⌣² p. |
| 6 | 29.8 | 20.5 | 79 | 54 | 1 | 9 | ------ | Ω a. |
| 7 | 27 | 22 | 78 | 64 | 9 | 10 | ------ | ⌣ p. |
| 8 | 29.9 | 20.9 | 80 | 64 | 9 | 10 | ------ |  |
| 9 | 30.3 | 19.5 | 79 | 56 | 3 | 3 | ------ |  |
| 10 | 29.8 | 15.9 | 93 | 56 | 0 | 1 | ------ | Ω² a. |
| 11 | 30.5 | 14.9 | 95 | 62 | 0 | 1 | ------ | Ω² ≡° a. |
| 12 | 31.2 | 17.5 | 91 | 65 | 0 | 4 | ------ | Ω² a. |
| 13 | 32.9 | 17.7 | 91 | 61 | 0 | 0 | ------ | Ω² a. |
| 14 | 30.5 | 17.9 | 94 | 78 | 0 | 0 | ------ | Ω² a. |
| 15 | 31.2 | 19.3 | 95 | 75 | 0 | 0 | ------ | Ω² a. |
| 16 | 32.8 | 20.3 | 94 | 61 | 0 | 0 | ------ | Ω² a. |
| 17 | 33.9 | 20.4 | 95 | 58 | 0 | 0 | ------ | Ω² ≡° a. |
| 18 | 34 | 23.2 | 89 | 55 | 0 | 0 | ------ |  |
| 19 | 34.2 | 19.9 | 91 | 55 | 0 | 0 | ------ | Ω² a. |
| 20 | 33.4 | 19 | 87 | 62 | 0 | 0 | ------ | Ω² a. |
| 21 | 31.7 | 21.1 | 92 | 57 | 0 | 1 | ------ | Ω² a. |
| 22 | 31.8 | 21.4 | 95 | 63 | 0 | 0 | ------ | Ω² ≡° a. |
| 23 | 30.4 | 22 | 96 | 71 | 0 | 1 | ------ | Ω² ≡° a. |
| 24 | 31.3 | 21.3 | 94 | 69 | 0 | 0 | ------ | Ω² a. |
| 25 | 31.4 | 17.9 | 94 | 66 | 0 | 0 | ------ | Ω² a. |
| 26 | 31.8 | 19.1 | 92 | 61 | 0 | 0 | ------ | Ω² a. |
| 27 | 31.9 | 19.6 | 91 | 64 | 0 | 0 | ------ | Ω² a. |
| 28 | 31.4 | 21.6 | 97 | 69 | 0 | 0 | ------ | Ω² a. |
| 29 | 31.6 | 20.4 | 96 | 65 | 0 | 0 | ------ | Ω² ≡° a. |
| 30 | 31.7 | 19.4 | 97 | 63 | 0 | 0 | ------ | Ω² ≡ a. |
| Mean | 31.5 | 20 | 90.2 | 61.1 | 0.8 | 1.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ |  |

### SANTO DOMINGO.

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. |  |
| 1 | 26.6 | 22.1 | 96 | 93 | 2 | 3 | 5.6 | ≡ p. |
| 2 | 26.8 | 21.9 | 96 | 93 | 10 | 10 | .8 | ● a. |
| 3 | 26.2 | 21.6 | 98 | 96 | 6 | 5 | ------ | d° p. |
| 4 | 26.7 | 21 | 98 | 97 | 6 | 6 | ------ |  |
| 5 | 27.5 | 21.7 | 97 | 90 | 4 | 6 | ------ |  |
| 6 | 27 | 22.7 | 97 | 99 | 5 | 8 | ------ | ϟ° a. p. |
| 7 | 25.3 | 20 | 93 | 91 | 8 | 9 | ------ | ϟ° a. p. d° a. |
| 8 | 25.5 | 20.5 | 95 | 92 | 9 | 8 | ------ | d a. Ω p. |
| 9 | 26.4 | 20.4 | 97 | 96 | 3 | 5 | ------ |  |
| 10 | 25.8 | 20.6 | 96 | 95 | 1 | 8 | 3.8 | d ● p. |
| 11 | 25.5 | 20.8 | 98 | 90 | 7 | 3 | ------ |  |
| 12 | 27.1 | 20.8 | 96 | 80 | 10 | 10 | 5.6 | ● a. Ω p. |
| 13 | 28.1 | 20.6 | 96 | 91 | 0 | 8 | 2.2 | Ω ⌒° a. ● p. |
| 14 | 28.2 | 21.7 | 87 | 72 | 4 | 3 | 4.6 | d ● p. |
| 15 | 28.3 | 21.6 | 91 | 84 | 10 | 4 | 7.6 | ⌒ a. ● p. |
| 16 | 28 | 22.2 | 89 | 90 | 9 | 10 | 3.6 | ● a. p° ●° p. |
| 17 | 28.5 | 22.7 | 86 | 86 | 4 | 8 | 2 | ⌒° a. ● p. |
| 18 | 27 | 22.5 | 87 | 84 | 7 | 8 | 42.9 | ⌒° d° a. d ●² p. |
| 19 | 28.5 | 21.9 | 92 | 83 | 7 | 6 | 11.5 | d ⌒² a. ● a. p. |
| 20 | 28.4 | 22 | 94 | 78 | 10 | 6 | 3.8 | d ⌒ a. ●° a. p. |
| 21 | 28.8 | 22 | 93 | 81 | 7 | 8 | 4.1 | ⌒ d ●° a. p. |
| 22 | 29.2 | 22.6 | 95 | 77 | 2 | 4 | 1 | Ω a. |
| 23 | 27.9 | 21.9 | 94 | 79 | 4 | 3 | ------ | ● a. |
| 24 | 26.9 | 20.6 | 85 | 79 | 4 | 7 | 3 | d ⌒ a. ●° p. |
| 25 | 26.6 | 21 | 85 | 78 | 2 | 5 | 3.6 | ● p. |
| 26 | 26.9 | 20.8 | 92 | 82 | 7 | 8 | 38.9 | d° ⌒ a. ● a. p. |
| 27 | 27.8 | 20.7 | 95 | 83 | 10 | 6 | ------ | ⌒° d° a. Ω p. |
| 28 | 26.7 | 20.6 | 97 | 78 | 2 | 5 | 8.5 | ⌒° d° ● p. |
| 29 | 25.1 | 20.9 | 97 | 95 | 10 | 10 | 8.1 | d ●° a. p. |
| 30 | 25.1 | 21.1 | 90 | 91 | 7 | 9 | 7.7 | d a. ● p. |
| Mean | 27.1 | 21.4 | 93.4 | 86.8 | 5.9 | 6.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 168.9 |  |

# SEISMOLOGICAL BULLETIN FOR NOVEMBER, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
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## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, $16^h$ $7^m$. **Iba** (W of Luzon). Earthquake of intensity II.

5, $8^h$ $40^m$. **Butuan** (N of Mindanao). Oscillatory and trepidatory earthquake of intensity II–III and long duration.

6, $23^h$ $26^m$ $56^s$.* **Central Luzon.** Earthquake of intensity V–VI, with epicenter in the northwestern part of the Province of Nueva Ecija, near 120° 50′ longitude east and 15° 45′ latitude north. A note received from Lieut. Chas. G. Dodel, Philippine Constabulary, stationed at Cuyapo, indicates that the center of disturbance can not have been very far from the said place, since there the latter was felt with greater intensity. Strong oscillations (V–VI) in the directions E–W and N–S were noticed; still, the buildings suffered no harm, but the ground showed some cracks running in the direction north to south. The epicenter appears to include some elevations which rise in the north of the extensive plain of Luzon, between the Agno and Chico Rivers. This is one of the regions in which seismic noises are heard very frequently; but there is no evidence that any severe and widely extended earthquake has ever originated within it.

The earthquake of November 6 was perceptible, with decreasing intensity, in all the adjacent provinces of central Luzon, up to distances of 150 kilometers. Nevertheless it has not been registered by any seismograph outside of the Philippines.

8, $9^h$ $0^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

10, $19^h$ $2^m$. **Guiuan** (SE of Samar). Oscillatory earthquake. Direction E–W, intensity III, duration 8 seconds.

11, $5^h$ $45^m$ $2^s$.* **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction WNW–ESE, intensity III, duration 4 seconds.

11, $20^h$ $49^m$ $17^s$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction N–S, intensity IV, duration 10 seconds.

13, $10^h$ $0^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

19, $10^h$ $12^m$ $0^s$.* **Sarangani** (S of Mindanao). Earthquake of intensity III. Between $10^h$ and $14^h$ the pendulum seismograph of Butuan registered likewise a seismic disturbance of force I–II. At both stations was probably felt the same shock which was registered at Manila, and whose epicenter seems to have been in the Pacific Ocean, to the east-southeast of Mindanao.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

19, $22^h$ $50^m$. **Guiuan** (SE of Samar). Oscillatory earthquake. Direction NW–SE, intensity IV, duration 10 seconds. Its epicenter was near the southern coast of Samar, and the disturbance was likewise felt, with intensity III, at Tacloban, northeastern Leyte.

20, $2^h$ $16^m$. **Cuyo Island** (W of Visayas). Oscillatory earthquake. Direction W–E, intensity III, duration 3 seconds.

20, $18^h$ $1^m$ $31^s$.* **Nueva Caceres** (Camarines). Oscillatory earthquake. Direction NNW–SSE, intensity III, duration 7 seconds.

22, $3^h$ $23^m$ $35^s$.* **Northern Luzon.** Earthquake of force VI, felt in all the provinces of northernmost Luzon as far parallel 17° north, and registered by all the seismographs in the Far East. Its epicenter was at a distance of approximately 460 kilometers from Manila, probably not far from the volcanic island Camiguin, in the neighborhood of meridian 121° 40′ east and parallel 18° 50′ north. We have not yet received the observations made on the nearby Batanes Islands. From the stations closest to the epicenter in northern Luzon we have received the following notes:

*Aparri* (*Cagayan*).—A very strong earthquake (VI) of trepidatory and gyratory character and long duration. Several persons maintain that during the disturbance they saw a reddish glow in the north, in the direction in which lies Claro Babuyan.

*Laoag* (*Ilocos Norte*).—A strong earthquake (V) of gyratory character. Direction of the principal waves NNE–SSW, duration 10 seconds. The earthquake was preceded by subterranean noises (VII of the Davison scale) which seemed to come from the direction of the cordillera to the east and northeast. Both, the earthquake and the noises were perceived throughout the province, creating excitement among the people who call this kind of noise "donorodor."

*Tuguegarao* (*Cagayan*).—Trepidatory and oscillatory earthquake. Direction N–S, intensity IV, duration 12 seconds.

*Vigan* (*Ilocos Sur*).—Oscillatory earthquake. Direction NNE–SSW, intensity III–IV, duration 10 seconds.

*Baguio* (*Benguet*).—Oscillatory earthquake; direction N–S, intensity III.

25, $16^h$ $19^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

26, $2^h$ $3^m$. **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction WNW–ESE, intensity III, duration 5 seconds.

29, $20^h$ $24^m$. **Aparri** (NE of Luzon). Oscillatory earthquake. Direction NNW–ESE, intensity III, duration 5 seconds.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0.$^h$)

| No. | Date. | Character. | Instrument and component. | Beginning. | | | Maximum range of motion. | | | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First preliminary tremors. | Second preliminary tremors. | Principal portion. | Hour. | Amplitude (2a). | Period. | | |
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 266 | 1 | I | V. | 5 25 42 | -------- | -------- | -------- | ------ | ------ | 5 37 | |
| 267 | 1 | $I_d$ | V. | 16 06 09 | -------- | 16 06 27 | 16 07 45 | 0.61 | 2.4 | 16 13 | Vertical component 0.42 mm. |
| 268 | 2 | I | V. | 6 58 55 | -------- | -------- | -------- | ------ | ------ | 7 15 | |
| | | | H. NNW | 6 58 59 | -------- | -------- | -------- | ------ | ------ | 7 18 | |
| | | | H. WSW | 6 58 59 | -------- | -------- | -------- | ------ | ------ | 7 16 | |
| 269 | 2 | $I_d$ | V. | 13 35 26 | -------- | 13 35 51 | 13 36 11 | .14 | 2.4 | 13 40 | V. C. 0.09 mm. |
| 270 | 6 | I | V. | 3 10 49 | -------- | 3 12 25 | 3 14 28 | .02 | 6.4 | 3 27 | |
| | | | W. N | 3 10 54 | -------- | 3 12 18 | 3 16 24 | .04 | 8.2 | 3 25 | |
| 271 | 6 | $II_v$ | V. | 23 26 56 | -------- | 23 27 21 | 23 28 54 | 1.97 | 2 | 23 42 | V. C. 1.25 mm. Earthquake, V-VI, central Luzon. |
| | | | W N | 23 26 56 | -------- | 23 27 20 | 23 28 54 | .93 | 7.6 | 23 39 | |
| 272 | 9 | I | V. | 12 28 27 | -------- | -------- | -------- | ------ | ------ | 12 56 | |
| 273 | 11 | $I_d$ | V. | 1 51 54 | -------- | 1 52 11 | 1 52 14 | .20 | 2.4 | 1 55 | V. C. 0.06 mm. |
| 274 | 11 | $I_v$ | V. | 5 45 02 | -------- | 5 46 50 | 5 47 13 | .04 | 2.4 | 5 56 | Eqke., III at Tacloban (NE of Leyte). |
| 275 | 11 | $I_v$ | V. | 20 49 17 | -------- | 20 50 14 | 20 51 12 | .04 | 3.6 | 20 56 | V. C. 0.02 mm. Eqke., IV at Aparri (NE of Luzon). |
| 276 | 12 | $I_d$ | V. | -------- | -------- | 1 30 01 | 1 30 04 | .02 | 2.4 | 1 32 | |
| 277 | 14 | $I_u$ | V. | 0 23 11 | 0 30 51 | 0 36 21 | 0 38 47 | .01 | 15.2 | 1 40 | |
| | | | H. NNW | 0 23 11 | 0 30 48 | 0 35 35 | 0 40 55 | .04 | 10.8 | 1 26 | |
| | | | H. WSW | 0 23 11 | 0 30 53 | 0 35 28 | 0 37 17 | .04 | 9.3 | 1 24 | |
| | | | W. E | 0 22 52 | 0 30 42 | 0 36 30 | 0 37 04 | .07 | 9.6 | 2 02 | |
| 278 | 17 | $I_d$ | V. | 9 35 42 | -------- | 9 35 54 | 9 36 16 | .14 | 2.4 | 9 40 | V. C.0.15 mm. |
| 279 | 17 | $I_d$ | V. | 13 44 50 | -------- | 13 45 01 | 13 45 17 | .10 | 2.4 | 13 49 | V. C. 0.06 mm. |
| 280 | 17 | $I_d$ | V. | 20 07 20 | -------- | 20 07 32 | 20 07 39 | .07 | 2.4 | 20 11 | V. C. 0.08 mm. |
| 281 | 18 | $I_d$ | V. | 13 10 32 | -------- | 13 10 43 | 13 11 01 | .05 | 2.2 | 13 14 | V. C. 0.05 mm. |
| 282 | 19 | $I_r$ | V. | 10 12 00 | -------- | -------- | -------- | ------ | ------ | 10 40 | V. C. 0.01 mm. |
| | | | H. WSW | 10 12 00 | -------- | -------- | -------- | ------ | ------ | 10 38 | |
| | | | W. E | 10 12 00 | -------- | -------- | -------- | ------ | ------ | 10 50 | |
| 283 | 20 | $I_d$ | V. | -------- | -------- | 18 00 51 | 18 00 53 | .02 | 2.4 | -------- | V. C. 0.01 mm. |
| 284 | 20 | $I_v$ | V. | 18 01 31 | -------- | 18 02 02 | 18 02 12 | .05 | 2.4 | 18 06 | V. C. 0.03 mm. Eqke., III at Nueva Caceres (SE of Luzon). |
| 285 | 21 | $I_r$ | H. WSW | 15 40 02 | -------- | 15 46 30 | 15 47 00 | .03 | 5.7 | 16 01 | |
| 286 | 22 | $II_v$ | V. | 3 23 34 | -------- | 3 24 24 | 3 24 54 | 1.95 | 2.4 | 4 29 | V. C. 1.02 mm. Eqke., VI, northern Luzon. |
| | | | H. NNW | 3 23 36 | -------- | 3 24 27 | 3 25 20 | 2.07 | 7.8 | 3 55 | |
| 287 | 22 | $I_d$ | V. | 22 02 04 | -------- | 22 02 30 | 22 02 37 | .04 | 2.4 | 22 05 | V. C. 0.02 mm. |
| 288 | 23 | $I_r$ | V. | 7 14 38 | 7 18 37 | 7 22 04 | 7 22 16 | .06 | 2.4 | 7 48 | |
| | | | H. NNW | 7 14 43 | 7 17 58 | 7 22 05 | 7 22 22 | .33 | 7.5 | 7 47 | |
| | | | H. WSW | 7 14 43 | 7 18 14 | 7 22 09 | 7 24 06 | .27 | 7.8 | 7 55 | |
| | | | W. N | 7 14 42 | 7 18 12 | 7 22 00 | 7 24 24 | .08 | 6.4 | 7 57 | |
| | | | W. E | 7 14 42 | 7 18 12 | 7 22 04 | 7 22 38 | .35 | 5.6 | 7 54 | |
| 289 | 24 | $I_d$ | V. | 12 41 52 | -------- | 12 42 03 | 12 43 25 | .03 | 2.2 | 12 45 | V. C. 0.01 mm. |
| 290 | 26 | $I_d$ | V. | 10 31 10 | -------- | 10 31 24 | 10 31 25 | .08 | 2.4 | 10 34 | V. C. 0.02 mm. |
| 291 | 27 | $I_d$ | V. | 21 32 13 | -------- | 21 32 19 | 21 32 20 | .12 | 2.4 | 21 34 | V. C. 0.06 mm. |
| 292 | 28-29 | I | V. | 23 52 04 | -------- | -------- | -------- | ------ | ------ | 0 40 | |
| | | | W. E | 23 51 27 | -------- | -------- | -------- | ------ | ------ | 0 32 | |
| 293 | 30 | $I_d$ | V. | 13 54 28 | -------- | 13 55 00 | 13 55 08 | .07 | 2.4 | 13 57 | V. C. 0.06 mm. |

*Instrumental constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T=8.4 seconds; WSW–ENE pendulum, T=8.2 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, $16^h$ $7^m$. **Iba** (W de Luzón). Temblor de tierra de intensidad II.

5, $8^h$ $40^m$. **Butuan** (N de Mindanao). Temblor de tierra oscilatorio y susultorio; intensidad II–III, larga duración.

6, $23^h$ $26^m$ $56^s$.* **Centro de Luzón.** Temblor de tierra de intensidad V–VI. Su epicentro se hallaba en la parte NW de la Provincia de Nueva Écija, hacia los 120° 50′ long. E y 15° 45′ lat. N. Una nota del Teniente de Constabularios, Mr. Chas. G. Dodel, estacionado en Cuyapó, indica que el origen no debía estar muy lejos de dicha población, por ser donde se sintió con mayor intensidad. Observáronse oscilaciones fuertes (V–VI) en la dirección E–W y N–S. No sufrieron daño los edificios, pero se vieron en el terreno algunas grietas en la dirección N–S. El epicentro parece comprender unas lomas que se levantan al N de la extensa llanura de Luzón entre el río Agno y el Chico. Es una región donde se oyen con mucha frecuencia ruídos séismicos, pero no consta se haya originado en ella ningún terremoto de grande intensidad y extensión.

El temblor del 6 fué perceptible con decreciente intensidad en todas las provincias circunvecinas del centro de Luzón hasta unos 150 kilómetros de distancia. No lo registraron sin embargo los seismógrafos de fuera de Filipinas.

8, $9^h$ $0^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

10, $19^h$ $2^m$. **Guiuan** (SE de Samar). Temblor oscilatorio. Dirección E–W, intensidad III, duración 8 segundos.

11, $5^h$ $45^m$ $2^s$.* **Tacloban** (NE de Leyte). Temblor oscilatorio. Dirección WNW–ESE, intensidad III, duración 4 segundos.

11, $20^h$ $49^m$ $17^s$.* **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección N–S, intensidad IV, duración 10 segundos.

13, $10^h$ $0^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

19, $10^h$ $12^m$ $0^s$.* **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III. Entre $10^h$ y $14^h$ registró también el seismógrafo de péndulo de Butuan un temblor de tierra de intensidad I–II. Probablemente en ambas estaciones se sintió el mismo séismo registrado en Manila, y cuyo epicentro se hallaba al parecer en el Océano Pacífico al ESE de Mindanao.

19, $22^h$ $50^m$. **Guiuan** (SE de Samar). Temblor oscilatorio. Dirección NW–SE, intensidad IV, duración 10 segundos. Su epicentro se hallaba cerca de la costa S de Samar y fué también sentido con intensidad III en Tacloban (NE de Leyte).

20, $2^h$ $16^m$. **Isla de Cuyo** (W de Visayas). Temblor oscilatorio. Dirección W–E, intensidad III, duración 3 segundos.

20, $18^h$ $1^m$ $31^s$.* **Nueva Cáceres** (Camarines). Temblor oscilatorio. Dirección NNW–SSE, intensidad III, duración 7 segundos.

22, $3^h$ $23^m$ $35^s$.* **N de Luzón.** Temblor de tierra de intensidad VI, sentido en todas las provincias del extremo N de Luzón hasta el paralelo 17° lat. N, y registrado por todos los seismógrafos del Extremo Oriente. Su epicentro se hallaba á unos 460 kilómetros distante de Manila, probablemente no lejos de la isla volcánica de Camiguín, hacia el meridiano 121° 40′ E y el paralelo 18° 50′ N. No han llegado aún los datos de las vecinas islas Batanes. De las estaciones del N de Luzón más próximas al epicentro se recibieron las siguientes notas:

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

*Aparri* (*Cagayán*).—Temblor susultorio y rotatorio muy fuerte (VI), duración larga. Varias personas aseguran haber visto durante el temblor un resplandor rojizo hacia el N, en la dirección de Claro Babuyan.

*Laoag* (*Ilocos Norte*).—Temblor fuerte (V), de caracter rotatorio; dirección de las ondas principales NNE–SSW, duración 10 segundos. Precedió al temblor ruido subterraneo (VII de escala Davison) que parecía proceder de la cordillera que está al E y NE. Tanto el temblor como el ruido fueron sentidos en toda la provincia, con extrañeza de la gente, que llama á semejante ruido con el nombre de "Donorodor."

*Tuguegarao* (*Cagayán*).—Temblor susultorio y oscilatorio. Dirrección N–S, intensidad IV, duración 12 segundos.

*Vigàn* (*Ilocos Sur*).—Temblor oscilatorio. Dirección NNE–SSW, intensidad III–IV, duración 10 segundos.

*Baguio* (*Benguet*).—Temblor oscilatorio; dirección N–S, intensidad III.

25, 16$^h$ 19$^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

26, 2$^h$ 3$^m$. **Tacloban** (NE de Leyte). Temblor oscilatorio. Dirección WNW–ESE, intensidad III, duración 5 segundos.

29, 20$^h$ 24$^m$. **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección NNW–SSE, intensidad IV, duración 6 segundos.

### REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# SEISMOTECTONIC LINES IN SOUTHERN LUZON.

In preceding papers an attempt has been made to determine the location of various seismic foci or epicenters in the Philippines, viz, those of the Batanes Islands and northern Luzon, of western Mindanao, of eastern Mindanao, the Visayas, and of the Camarines. At the same time was given a résumé of the most recent data concerning the physiography and geology of the respective regions. The present paper will treat of the epicenters (taking the word in the wider sense in which it is used at present) which chiefly affect Manila and the neighboring provinces. But instead of locating and describing each individual center independently of any connection which may exist between them, as was done hitherto, we will endeavor to determine the principal seismotectonic or fracture lines which seem to intersect in southern Luzon, and in which originate the more violent earthquakes which from time to time shake this region.

In order to determine these lines, we have gone over not only the documents on which is based the Earthquake Catalogue[1] published some time ago, but likewise the lists of less severe disturbances given in the "Monthly Bulletin of the Weather Bureau" and in "La Seismología en Filipinas" (Manila, 1895).

Three principal seismotectonic lines are found in southern Luzon. One of these runs from Balayan Bay in an approximately SSW–NNE direction through Taal Volcano, passes west of Talim Island (Lake Bay), and out into the Pacific Ocean at a point of the eastern coast of Luzon to the east-northeast of Manila. This line of fracture we shall designate as the *Taal-Volcano Line.* The second line appears to start from the extreme northwest of Mindoro and follows a SSE–NNW course underneath the China Sea, at a short distance from the coasts of Cavite and Zambales provinces. To it we give the name of the *Southwestern Line.* A third fracture line follows the eastern coast of Luzon in an approximate N–S direction from Baler Bay[2] southward, crossing the isthmus of Atimonan and, probably, passing west of Marinduque, Romblon and Panay Islands, extends as far as the Sulu Sea. This line we call the *Eastern Line.*

The location of these lines is shown on the accompanying map (Plate XV). In describing them we shall dwell chiefly on the Taal-Volcano Line, since it is a greater menace to Manila than the others. Aside from the seismotectonic lines mentioned there are several seismic centers of less importance within the volcanic region of southern Luzon, which occasionally give rise to earthquakes of volcanic character.

**The Taal-Volcano Line.**—During the great eruptions of Taal Volcano it has been noticed that the earthquakes accompanying them had their maximum intensity not merely on Volcano Island itself, but likewise within an adjacent zone which sometimes extended to the south-southwest, toward Balayan Bay, and at others toward north-northeast, as far as Lake Bay. Thus, for instance, during the eruption of 1749, the earthquakes displayed their energy in the entire zone to the north-northeast of the volcano—that is, in the region lying between lakes Bombon and Bay, throughout which they produced large fissures and extensive subsidences. On the contrary, in the recent outburst of

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[1] Catalogue of Violent and Destructive Earthquakes in the Philippines, Manila, 1910.

[2] In default of a proper name, we designate by the name of Baler Bay the large indentation of the coast line between Point Inaguican and Cape San Ildefonso.

1911, the region which suffered most from them, lay to the south-southwest of Taal, between Lake Bombon and Balayan Bay. These facts, together with the physiographic and geological aspects of the region in question, suggested to Messrs. Adams and Pratt, geologists of the division of mines, Bureau of Science, the idea, that the line of fracture on which rises Taal Volcano, starts from Balayan Bay and, running in an approximately SSW–NNE direction, passes through the depression in which flows the Pansipit River, the volcano, thence through the eastern slopes of Pico Gonzalez, and the western part of Lake Bay.[1] The prolongation of this line toward south-southwest would run almost parallel to the northwestern coast of Palawan Island, toward Balabac Strait and northeastern Borneo. Its prolongation toward north-northeast, after entering Lake Bay, passes through the narrows between Talim Island and the peninsula of Antipolo, then crosses the Eastern Cordillera of Luzon, the former district of Infanta (now part of Tayabas Province), and enters the Pacific Ocean through Baler Bay, continuing parallel to the southeastern coasts of Principe (likewise belonging to Tayabas) and Isabela Province. The existence of this fault line extending from the region to the south-southwest of Taal to the Pacific Ocean is suggested by the appearance of the territory and its physiographic conditions as well as by the meagre geological data concerning it which are available. It appears to be further confirmed by the situation of the principal seismic centers in southern Luzon, as will be seen anon.

The region south-southwest of Taal Volcano, between the latter and Balayan Bay, consists of the valley or depression in which flows the Pansipit River, the only outlet of Lake Bombon. The subsoil of this depression is formed by volcanic tuff and basaltic rocks, except the bed and mouth of the river, where alluvium has been deposited. Geologists do not agree whether or not this opening formerly was an arm of the sea, which communicated with Lake Bombon, but was gradually cut off and filled up by volcanic products. Mr. Adams prefers to ascribe its formation to the Pansipit River. The earthquakes incident to the most recent eruption (1911) opened a great number of fissures in this depression, all of which ran in the direction SSW–NNE. Their lengths varied between 1 and 7 kilometers. In two of them, one on either side of the valley, the edge of the fissure lying toward the latter was found to be over 1 meter lower than the up-hill edge. These fissures opened mainly in the bottom of the valley, only two occurring on its slopes, one on the eastern, the other on the western slope.[2]

Some geysers likewise stimulated to renewed activity, and mud cones formed near the coast, but within the fissured zone, in a locality where hot springs exist which appear and disappear at long and irregular intervals.

Wherefore, the existence of a line of fracture running through the Pansipit Valley from Taal Volcano to Balayan Bay seems to be established beyond doubt.

We now come to the prolongation of this line toward north-northeast of the said volcano. Its continuation through the relatively low zone which separates Lake Bombon from Lake Bay is demonstrated by the following facts: (1) Historians tell us that the fissures and subsidences produced on the occasion of the volcanic eruption in 1749 ran in a north-northeasterly direction from one lake to the other. (2) During the eruption of 1911, a fissure opened in the same region, which could be followed for a distance of 3 kilometers in the same direction. (3) In his recent geological reconnaissance of southwestern Luzon Mr. Adams came to the conclusion that the eastern side of Pico Gonzalez is in reality the western, elevated scarp of a geological fracture; the eastern edge lying buried underneath the tuff formation which covers the entire region. Hence, there can be no doubt that an important fault line running toward north-northeast exists in the region lying between Lakes Bombon and Bay. The configuration of this region seems likewise to confirm this conclusion: the territory appears in the main as a wide valley between Mount Gonzalez and the outermost western spurs of Mount Maquiling, in which are found several secondary cones pertaining to this volcanic group.

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[1] Geological Reconnaissance of Southwestern Luzon. By G. I. Adams. Philippine Journal of Science, Vol. V, No. 2. The Eruption of Taal Volcano, January 30, 1911. By W. E. Pratt. Ibid., Vol. VI, No. 2.

[2] W. E. Pratt, loc. cit.

On leaving this zone, the fault crosses the western part of Lake Bay, passing between Talim Island and the southern extremity of the Antipolo peninsula or range. The south point of the latter and the north end of Talim are not exactly opposite each other; the former appears displaced toward west and advances toward south, while the latter lies east and protrudes northward. Hence, the narrow passage between them runs approximately from SSW to NNE, as if indicating that it owes its origin to a fault line having the same direction. This line then enters the valley of Morong which on the western, Antipolo sides, is bounded by very steep inclines, and finally crosses the Eastern Cordillera, reaching the Pacific coast north of Infanta.

The region of the Eastern Cordillera which is traversed by the supposed seismotectonic line, shows a very complicated and confused topography and hydrography, making it difficult to decide which of the many towering peaks, whose trend is frequently opposite, really constitute the cordillera. The principal water courses are especially remarkable on account of their irregular and abruptly changing directions. Thus the Agos River, which empties into the Pacific Ocean north of Infanta, traverses nearly the whole cordillera and reaches the coast flowing northeastward, while its own source as well as those of its principal tributaries, viz, the Lenatin and Limutan, lie to the northwest. The course of this river thus forms a V in whose opening lies one of the highest mountains of the range. Something similar happens to the Bosoboso River, which flows first northward, then turns sharply toward west, and finally toward south. It is very probable that a geological reconnaissance of this region will disclose proofs of great geological upheavals which at present we can only suspect on the strength of its evident topographical irregularities.

Once within the Pacific Ocean, the line runs diagonally across Baler Bay and then close to the coasts of Casiguran which, like the Eastern Cordillera or Sierra Madre, have the orientation SSW–NNE.

Of the seismic data which tend to confirm not only the existence of a fault line to the south-southwest and north-northeast of Taal Volcano, but likewise its assumed prolongation across the Eastern Cordillera and underneath the Pacific Ocean, we will mention only the most important. The following earthquakes which were accompanied by dislocations both, to the north-northeast and south-southwest of Taal Volcano, and, hence, along a large part of the fracture line, probably originated in the fault just described: 1645, 1658, 1716, 1728, 1749, 1754, 1771, and 1873. In our Earthquake Catalogue they bear the following ordinal numbers: 12, 17, 23, 24, 27, 28, 33, and 91. The earthquakes of 1675, 1852, 1869, 1877, 1889, and 1901 (Nos. 19, 51, 70, 104, 144, and 181 of the catalogue) had their origin evidently south-southwest of the volcano, between the latter and Mindoro Island—that is to say, in the south-southwestern end of the line of fracture. Within the portion lying to the north-northeast of Taal, viz, from Lake Bay to the Pacific Ocean, originated the following earthquakes: 1824 (two), 1862 (two), 1863, 1874 (two), 1880 (two), which bear the catalogue numbers 43, 44, 56, 58, 59, 98, 100, 116, and 117. All of this class of earthquakes had their meizoseismic areas in the Eastern Cordillera and its spurs, to the east and east-northeast of Manila, except No. 117 which was confined to the southwestern part of Lake Bay and its shores.

Hence, we may safely affirm that all the earthquakes which have caused notable damage to the city of Manila had their origin toward the east or east-northeast, where there passes the seismotectonic line under discussion. The most disastrous of these, the one in 1645, seems to have been due to simultaneous dislocations in the said line and in the Eastern Line, which latter, as we shall see presently, starting from the region of the Batanes and Babuyanes Islands, probably passes southward through Cagayan and Isabela Provinces, and intersects the Taal-Volcano Line underneath Baler Bay.

Of the earthquake of 1863 it is practically certain that its epicenter lay in the Eastern Cordillera, to the east-northeast of Manila, and as late as 1880 Señor Centeno found still very vivid recollections of it among the inhabitants of Infanta District.

As regards the earthquakes in July, 1880, which have been studied best by Señor D. A. Centeno, "Ingeniero de Minas," it is evident that two of them must have originated in the same fault line—the one to the east, the other to the east-northeast of Manila—at least, this is the conclusion to which leads the study of the isoseismal curves drawn by the said engineer. Of the three ellipses which represent the meizoseismic areas of the three earthquakes, two are indeed intersected by the fracture line in approximately the direction of their minor axes; but in both cases the anomaly can be explained by the fact that the ground toward west and northwest from the center consisted of alluvium, in which naturally enough the seismic waves developed greater violence than along the mountain range.

The preceding data establish beyond doubt the existence of one or several seismic foci in the Eastern Cordillera to the east and east-northeast of Manila, which are responsible for the shocks which most affect the capital. Less evident it is, that these foci are on a line of fracture which has the same direction as, and is in fact the continuation of, the one which runs from Lake Bay across Taal Volcano to Balayan Bay, since there is question of a region entirely unexplored by geologists. Still the existence of such fracture line is very probable, especially if we remember that one of the principal systems of tectonic lines of the Archipelago follows approximately the same SSW–NNE direction.

The seismicity of the zone extending from Balayan Bay to Baler Bay along the Taal-Volcano Line, is among the highest to be found in the Archipelago. Besides the great earthquakes mentioned, no less than 115 disturbances of less intensity (IV–V) have been recorded as originated in it during the last twenty-five years. Of this number the greater part belongs, however, to the region between Lake Bay and Balayan Bay, as not a single seismic station exists, either within the cordillera, or on the Pacific coast, in sufficient proximity to the seismotectonic line. Consequently, of the earthquakes which had their centers in the east-northeast, only such are on record as were of great extension and sufficiently strong to be perceptible in Manila, Santa Cruz (Laguna), and Baler.

The existence and probable extent of the seismotectonic line of Taal Volcano being established, it follows that this line must be the most dangerous to Manila. But not all the disturbances originating in it affect the capital in the same way. Those which have their epicenter between Lake Bay and Balayan Bay, are characterized by relatively long duration and rather slow undulations which latter, however, are of large amplitude, as we have pointed out on many occasions. But those which proceed from the northeastern part of the line are of a dangerous nature, owing to the rapidity of the movements and the apparent changes in their direction, which latter are undoubtedly the result of various, separate trains of seismic waves. Hence, though distance and intensity be the same, the latter class of earthquakes makes a much greater impression than those whose origin lies in the southwestern part of the fault line.

Guided by the experience which he has gathered as well as by the data furnished by historical accounts, the writer has repeatedly pointed out that part of the Eastern Cordillera which lies to the east and east-northeast of Manila as the region in which originate the earthquakes most dangerous to the capital of the Archipelago. The first time when he ventured to express this idea was in 1895, when he investigated the prevailing directions of 211 seismic disturbances which had been recorded at the Manila Observatory since 1869.[1]

**The Southwestern Line.**—This seismotectonic line appears to start near northwestern Mindoro, between Cape Santiago and the Lubang Islands, and runs almost parallel to the southwestern coast of Luzon as far as the latitude of Cape Bolinao. It is quite probable that it follows the irregular submarine scarp which exists off the coasts of Cavite and Zambales Provinces and close to them, where the soundings suddenly increase from less than 250 to more than 2,000 meters.

As having had their origin in the Southwestern Line, between the Lubang Islands and Cape Bolinao, we find in the Earthquake Catalogue the following earthquakes: 1852, 1872 (two), 1878, 1880, 1902, a total of six, whose intensities varied between degrees VI and IX of the De Rossi-Forel scale. In the catalogue they bear the numbers 49, 84, 90, 107, 118, and 185. The greater part of these disturbances were felt with equal intensity along the coasts and within the provinces of Cavite as well as of Bataan and Zambales. The earthquake of 1872, No. 84, alone appears to have had a very small meizoseismic area. The number of less severe shocks found in the lists covering the period 1880–1911 is 59, account being taken only of those whose extension and intensity were of sufficient magnitude to allow of approximately determining the center of disturbance.

**The Eastern Line.**—In addition to the two lines discussed thus far, there appears to exist a third which possibly traverses the entire Archipelago, near the one hundred and twenty-second meridian east, from the Batanes Islands to the west of Mindanao.[2] To the northeast of Manila it crosses the Taal-Volcano Line underneath Baler Bay, and continues southward between the eastern coast of Luzon and Polillo Island, and crosses the isthmus of Atimonan, passing east-southeast of Banahao Volcano and in the direction of the west-end of Marinduque Island.

The visible, geographical characteristics of this line, as far as it lies in southern Luzon, are certainly remarkable. After crossing the Taal-Volcano Line, this fault passes very close to the northwestern extremity of the deep marine through which skirts the coasts of Mindanao, the Visayas, and southeastern Luzon. Then it passes through the strait which separates the small island of Polillo from the coast of Luzon, in the direction toward Lamon Bay and the isthmus of Atimonan. This entire region is remarkable for the abrupt changes in the directions of the tectonic lines: on the said isthmus, the Eastern Cordillera appears as if it had been suddenly twisted westward; while Polillo Island as well as some smaller islands in Lamon Bay preserve a SE–NW direction, which is more in harmony with the tectonic lines of the Camarines. The whole area occupied by Lamon and Baler Bays looks like a discontinuation or break in the general tectonic lines which would sweep in an immense arc, first in the direction SE–NW, and then S–N, from the Camarines to the northeastern end of Luzon: thus giving the impression that the great indentation east of Luzon formed by these two bays, has some connection with the vast and progressive subsidence which resulted in the formation of the great trough mentioned. The latter is possibly still deepening, as would seem to be indicated by the frequent earthquakes along its entire western slope and near its northwesternmost portion which ends in Baler Bay.

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[1] "La Seismología en Filipinas," pp. 107 and 108. "Report on the Seismic and Volcanic Centers of the Philippine Archipelago," p. 25. "Volcanoes and Seismic Centers of the Philippine Archipelago," p. 77.

[2] Contributions to the Physiography of the Philippine Islands. By H. G. Ferguson (division of mines, Bureau of Science). Earthquakes of the Batanes Islands and Southern Formosa. By Rev. Miguel Saderra Masó, S. J. (Monthly Bulletin of the Weather Bureau, March, 1909.)

The mountain masses which constitute the extinct volcano Banahao seem to lie slightly west of this seismotectonic line, though they are undoubtedly related to it. On the other hand, Marinduque Island must be a short distance east of it, as is shown by the large number of seismic disturbances which actually appear to have their epicenter between this island and Mindoro. This center of activity possibly marks the point of intersection of the line under discussion, with another which probably runs from Masbate Island toward Verde-Island Passage, between Luzon and Mindoro.

With the Eastern Line are connected the following earthquakes: (*a*) Those whose centers lie near the eastern coast of Luzon, east of Lake Bay and Banahao Volcano; (*b*) those which originate on or near the isthmus of Atimonan; (*c*) those which have the seat of disturbance between the islands of Mindoro and Marinduque. The principal earthquakes proceeding from this line occurred in 1730, 1743, 1830, 1869, 1873 (two), 1880, 1884, 1895 (two), and 1901; the corresponding catalogue numbers being 25, 26, 46, 71, 94, 95, 115, 131, 163, 164, and 180. The number of less severe shocks is 41 for the period 1880–1911.

The earthquakes originating in this line have frequently been characterized by a very small area of activity, which included only the eastern portions of Laguna and Tayabas Provinces, the northeast of Mindoro, and Marinduque Island. In this regard they might be classed with volcanic earthquakes, though many of them had their origin evidently at rather large distances to the north, east, or south from the extinct volcano Banahao. It has likewise been observed that the seismic waves seem to experience some difficulty in propagating themselves in the direction of the nearby cordillera of the Camarines.

**The Zambales Line.**—The cordillera of Zambales seems to constitute likewise a seismotectonic line, but of very secondary character. The disturbances for which the latter is responsible, are more remarkable for their wide extent than for their intensity. They are felt mainly in the alluvial plains of Bataan, Pampanga, and Tarlac Provinces. A line of fracture starts from the western part of Balayan Bay, passes east of the westernmost mountains of Cavite Province [1] and probably continues east of the cordillera of Zambales, and terminates in Lingayen Gulf.

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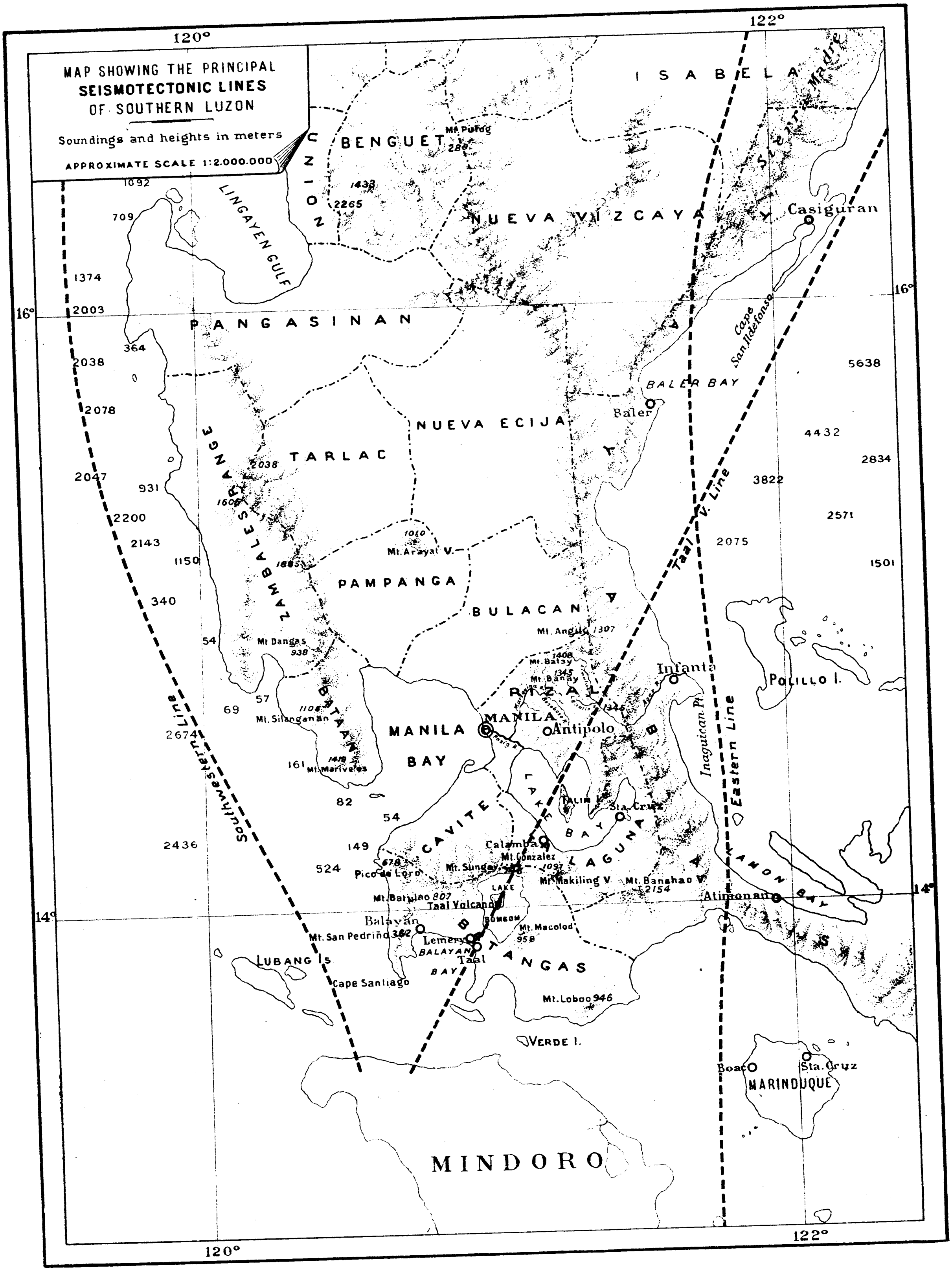
[1] G. I. Adams, loc. cit.

Plate XV.


MAP SHOWING THE PRINCIPAL
SEISMOTECTONIC LINES
OF SOUTHERN LUZON
Soundings and heights in meters
APPROXIMATE SCALE 1:2.000.000
120°
122°
16°
14°
ISABELA
Sierra Madre
BENGUET
Mt. Pulog
2880
UNION
1433
2265
NUEVA VIZCAYA
Casiguran
LINGAYEN GULF
1092
709
1374
2003
PANGASINAN
Cape San Ildefonso
364
2038
5638
BALER BAY
Baler
2078
NUEVA ECIJA
4432
2834
ZAMBALES RANGE
TARLAC
2038
2047
931
1606
3822
Taal V. Line
2200
2143
1010
Mt. Arayat V.
2571
2075
1150
1685
PAMPANGA
1501
340
BULACAN
Mt. Angilo 1307
54
Mt Dangas
938
1408
Mt. Batay
1345
Mt. Banay
Infanta
Polillo I.
57
1108
RIZAL
69
Mt. Silanganan
BATAAN
Southwestern Line
MANILA
Antipolo
2674
MANILA BAY
1418
161
Mt. Mariveles
Inagucan Pt.
Eastern Line
82
LAKE BAY
TALIM I.
Sta. Cruz
54
CAVITE
LAGUNA
Calamba
2436
149
678
Mt. Gonzalez
524
Pico de Loro
Mt. Sungay
1097
Mt. Makiling V.
Mt. Banahao V.
2154
TAYABAS
LAMON BAY
Atimonan
Mt. Batulao 807
Taal Volcano
LAKE
BOMBOM
Balayan
Mt. Macolod
958
Mt. San Pedriño 362
Lemery
BALAYAN BAY
Taal
BATANGAS
LUBANG Is.
Cape Santiago
Mt. Loboo 946
VERDE I.
Boac
Sta. Cruz
MARINDUQUE
MINDORO

# LINEAS SEISMOTECTÓNICAS DEL SUR DE LUZÓN.

En notas precedentes se procuró localizar diferentes focos ó epicentros séismicos de Filipinas, tales como los de las Islas Batanes y norte de Luzón, del oeste de Mindanao, de la parte oriental de Mindanao é Islas Visayas y de Camarines; resumiendo al mismo tiempo los datos más recientes sobre la fisiografía y geología de las regiones donde existen los mencionados centros. La presente nota versará sobre los epicentros (tomados éstos en el sentido más amplio que se da hoy á esta palabra), que principalmente afectan á Manila y las vecinas provincias. En lugar de señalar y describir independientemente cada uno de ellos, como otras veces, haremos un ensayo de determinación de las principales líneas seismotectónicas, ó de fractura, que parecen cruzar la parte meridional de Luzón y de donde proceden los más violentos terremotos que de tiempo en tiempo la conmueven.

Para localizar estas líneas hemos revisado no solamente los documentos séismicos con que se formó el "Catálogo de Terremotos Violentos y Destructores de Filipinas",[1] sino también las listas de otros temblores de tierra de menos intensidad publicadas en los Boletines Mensuales del Observatorio y en "La Seismología en Filipinas."

Las líneas seismotectónicas que pueden determinarse en la parte meridional de Luzón son tres principales: Una en dirección próximamente SSW–NNE, que partiendo del seno de Balayán, pasa por el volcán Taal, por el W de la Isla Talim y sale al Pacífico por la costa oriental al ENE de Manila: á ésta le damos el nombre de *Línea del volcán Taal.* Otra parece partir del extremo NW de Mindoro y se prolonga en dirección SSE–NNW dentro del mar de la China, á poca distancia de las costas de Cavite y de Zambales: puede designarse con el nombre de *Línea del SW de Luzón.* Una tercera corre á lo largo de la costa oriental de Luzón, en dirección aproximada N–S, desde la bahía de Baler,[2] atraviesa el istmo de Atimonan y probablemente sigue hasta el mar de Joló, por el W de Marinduque, Romblon y Panay: á ésta llamaremos *Línea del Este.*

Todas estas líneas van representadas en el mapa que acompaña el texto inglés, Plate XV. En su descripción nos detenemos principalmente en la del Taal, por ser la más peligrosa para Manila. Además de estas líneas seismotectónicas existen en la región volcánica del Sur de Luzón otros focos séismicos de poca importancia donde se originan temblores de tierra volcánicos.

**Línea seismotectónica del Volcán Taal.**—Durante las grandes erupciones del Volcán Taal se ha observado que los terremotos que las acompañan tienen su máxima intensidad no sólo en la isla del volcán sino también en una zona inmediata, que se prolonga, unas veces hacia el SSW, en dirección al seno de Balayán, y otras hacia el NNE, hasta el lago de Bay. Así por ejemplo, en la erupción de 1749 desarrollaron principalmente su energía en toda la zona situada al NNE, entre los lagos de Bombón y de Bay, produciendo grandes grietas y hundimientos en toda ella. Recientemente en 1911 la zona más castigada fué la de SSW del volcán, entre el lago de Bombón y el seno de Balayán.

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[1] Catalogue of Violent and Destructive Earthquakes in the Philippines. Manila, 1910.

[2] Por falta de nombre propio designamos con el nombre de Bahía de Baler todo el extenso recodo entre la Punta Inaguican y el Cabo San Ildefonso.

Tales hechos, así como los caracteres fisiográficos y geológicos que presenta la región aludida, han sugerido á los geólogos Messrs. Adams y Pratt de la División de Minas del Bureau de Ciencias, la idea de que la fractura geológica en que ha surgido el Volcán Taal corre proximamente de SSW á NNE:[1] esto es, que partiendo del seno ó bahía de Balayán sigue á lo largo del valle del río Pansipit, hacia el mismo volcán, y después continúa en dirección al NNE, pasando por el E del Pico Gonzalez, hacia la parte occidental de la laguna de Bay.

La prolongación de esta línea por el SSW seguiría casi paralela á la costa NW de la Isla Palawan, hacia el estrecho de Balabac y parte NE de Borneo. Su prolongación hacia el NNE, dentro ya del lago de Bay, pasa por el estrecho que separa la Isla Talim de la península de Antipolo después atraviesa la cordillera oriental de Luzón por el distrito de La Infanta y continúa dentro del Pacífico por la bahía ó seno de Baler y se acerca luego paralelamente á la costa SE de las Provincias de La Isabela y Tayabas (Principe). La existencia de semejante línea seismotectónica desde el SSW del Taal hasta el Pacífico la persuaden tanto la apariencia y las condiciones fisiográficas externas como los pocos datos geológicos que se conocen; también parece confirmarla la situación de los principales epicentros séismicos de la parte sud de Luzón, según se verá en las siguientes líneas.

La parte SSW del volcán, entre éste y el seno de Balayán, está constituída por el valle ó depresión, por donde corre el río Pansipit, único desagüe del lago Bombón. Todo el suelo de esta depresión es de toba volcánica y rocas basálticas, excepto el lecho y desembocadura del río, donde se ha depositado alluvión. No están acordes los geólogos en si esta abertura constituía antes un brazo de mar que comunicaba con el lago de Bombón, el cual con el tiempo se cerró y rellenó en parte con los productos volcánicos. Mr. Adams juzga que más bien debe haber sido formada por el mismo río Pansipit. Los terremotos de la última erupción abrieron en esta depresión multitud de grietas, todas en la misma dirección SSW–NNE. Su longitud varía entre y uno y siete kilómetros: en dos de ellas, una á cada lado del valle, el labio de la parte del valle quedó más de un metro más bajo que el opuesto. Las grietas se formaron principalmente en el fondo del valle, y solo dos en sus vertientes, una al E y otra al W.[2] Además se renovaron algunos geyseres y se formaron conos de lodo cerca de la costa del mar, pero dentro de la zona agrietada, en un sitio donde existen fuentes termales, las cuales suelen aparecer y desaparecer á intervalos largos y desiguales. Parece por consiguiente cierto que por el valle del Pansipit corre una línea de fractura que se extiende desde el volcán hasta el seno de Balayán.

Pasemos á la prolongación de la línea hacia el NNE del volcán. Su continuación á través de la zona relativamente baja que separa los lagos de Bombón y de Bay está demostrada: 1.º Por las grietas y hundimientos producidos durante la erupción volcánica de 1749, las cuales, según los historiadores, se prolongaron en dirección NNE de uno á otro lago. 2.º Por una grieta que se abrió en la erupción de 1911, en la misma dirección, la cual pudo seguirse en una longitud de 3 kilómetros. 3.º En el reciente reconocimiento geológico del SW de Luzón, hecho por el mencionado geólogo, Mr. Adams, se saca la conclusión de que la parte oriental del Pico Gonzalez es un verdadero escarpe ó labio occidental elevado de una fractura geológica: el labio oriental debe estar debajo de la capa de toba que cubre toda la región. Queda por consiguiente fuera de duda que en la zona de terreno que media entre los dos lagos de Bombón y Bay existe en dirección NNE una fractura geológica de importancia. Su misma configuración parece además confirmarlo; en gran parte se presenta como un ancho valle entre el monte Gonzalez y los últimos estribos occidentales del volcán Maquiling, donde existen algunos conos secundarios pertenecientes á este grupo volcánico.

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[1] Geological Reconnaissance of Southwestern Luzon. By G. I. Adams, Philippine Journal of Science, Vol. V, No. 2. The Eruption of Taal Volcano, January 30, 1911. By W. E. Pratt. Ibid., Vol. VI, No. 2.

[2] W. E. Pratt, loc. cit.

Á partir de esta zona la fractura atraviesa la parte occidental del lago de Bay por entre la Isla Talim y el extremo meridional de la península ó cordillera de Antipolo. La punta S de esta península y la punta N de Talim no están en perfecta oposición, sino que la primera queda al W y se adelanta algo hacia el S, mientras que la secunda queda al E y se adelanta á su vez hacia el N; de tal manera que el estrecho paso entre ellas corre proximamente de SSW á NNE, como indicando que su formación fué debida á una falla que lleva la misma dirección. Entra luego en el vallecito de Morong, cuyos bordes occidentales, correspondientes á la montaña de Antipolo son muy escarpados; y atraviesa después la cordillera oriental hasta llegar á la costa del Pacífico por el N de Infanta.

La parte de cordillera oriental atravesada por esta supuesta línea de fractura presenta una topografía é hidrografía muy confusa y enmarañada, de tal manera que no es fácil definir cual de los muchos macizos montañosos que en ella se distinguen, con rumbos muchas veces encontrados, constituye la verdadera cordillera. Los principales ríos llaman la atención por sus cursos irregulares, con cambios muy bruscos de dirección. Así el río Agos, que desemboca en el Pacífico al N de Infanta, atraviesa casi toda la cordillera y llega á la costa con rumbo al NE, mientras que tanto su origen como los de sus principales afluentes, el Lenatin y el Limutan, se halla al NW, formando así una V que abraza una de las montañas más altas de la cordillera. Casi lo mismo sucede con el Bosoboso el cual corre primero hacia el N y dobla después bruscamente al W y por fin al S. Cuando se pueda reconocer geológicamente esta región es muy posible se encuentren pruebas de grandes trastornos geológicos, que ahora solo se sospechan á causa de sus irregularidades topográficas.

Dentro ya del Pacífico esta línea seismotectónica atraviesa diagonalmente el extenso seno de Baler y vuelve luego á acercarse paralelamente á las costas de Casiguran donde tanto éstas como la cordillera oriental ó Sierra Madre tienen el mismo rumbo SSW–NNE.

Los datos séismicos que parecen confirmar no sólo la existencia de una línea de fractura al SSW y NNE del volcán Taal, sino también la extensión que le damos á través de la cordillera oriental, hasta adentro del Pacífico son muy numerosos y citaremos solamente los principales. Tuvieron probablemente su origen en la línea descrita con dislocaciones tanto al NNE como al SSW del volcán Taal, comprendiendo así gran parte de la línea de fractura, los terremotos de 1645, 1658, 1716, 1728, 1749, 1754, 1771, y 1873, que en nuestro Catálogo[1] llevan los Nos. 12, 17, 23, 24, 27, 28, 33, 91. Los terremotos de 1675, 1852, 1869, 1877, 1889 y 1901 correspondientes á los Nos. 19, 51, 70, 104, 144, y 181, lo tuvieron evidentemente al SSW del volcán, entre éste y la Isla de Mindoro, ó sea en el extremo SSW de la fractura. En la parte de la línea que cae al NNE del Taal, desde el lago de Bay hasta el Pacífico, se originaron los siguientes terremotos: 1824, 1862, 1863, 1874, 1880; Nos. 43, 44, 56, 58, 59, 98, 100, 116, y 117: todos estos terremotos tuvieron su área meizoséismica en la cordillera oriental y sus estrivaciones correspondientes al E y ENE de Manila, excepto el señalado con el No. 117, que comprendió solamente la parte SW del lago de Bay con sus riberas.

Puede por consiguiente asegurarse que todos los terremotos que han causado algún daño á la ciudad de Manila tuvieron su origen hacia el E ó ENE por donde pasa esa línea seismotectónica. El más desastroso de todos, el de 1645, parece fué debido á dislocaciones simultáneas en esta línea y en la del E, de que hablaremos luego, la cual desde las Islas Batanes y Babuyanes, probablemente se prolonga hacia el S á lo largo de las Provincias de Cagayán y de La Isabela, hasta venir á cruzarse con el del Taal en el seno de Baler.

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[1] Catalogue of Violent and Destructive Earthquakes in the Philippines. Manila, 1910.

Del terremoto de 1863 es casi cierto que tuvo su epicentro al ENE de Manila, en la cordillera oriental, y de sus efectos el Sr. Centeno halló aún en 1880 muy vivo recuerdo entre los habitantes de la Infanta.

Respecto á los terremotos de Julio de 1880, los mejor estudiados, por el Sr. D. A. Centeno ingeniero de minas, es evidente que dos de ellos debieron originarse en la misma línea ó falla, uno al E y otro al ENE de Manila: así resulta por lo menos al examinar las isoseistes trazadas por el dicho Ingeniero. De las tres elipses que demarcan el área meizoséismica de los tres terremotos principales, dos se hallan cortadas por esta línea seismotectónica, próximamente en la dirección de sus ejes cortos. En ambos casos sin embargo puede explicarse esta anomalía por la naturaleza de los terrenos de aluvión existentes al W y al NW, en las cuales las ondas séismicas desarrollaron aparentemente mayor violencia que á lo largo de la cordillera.

Los datos precedentes dejan fuera de duda la existencia de uno ó varios focos séismicos en la cordillera oriental al E y ENE de Manila, donde se originan los terremotos y temblores de tierra que más afectan la capital. Que los tales focos estén en una fractura que siga la misma dirección y sea continuación de la que se extiende desde el lago de Bay hasta el seno de Balayán á través del volcán Taal ya no es tan evidente, por tratarse de una región completamente inexplorada por los geólogos. Una tal línea de fractura sin embargo es muy verosímil si se tiene en cuenta que uno de los principales sistemas de líneas tectónicas del Archipiélago sigue próximamente la misma dirección SSW-NNE.

La seismicidad de la zona que se extiende desde el seno de Balayán al de Baler, atravesada por esta línea seismotectónica, es de las mayores del Archipiélago: además de los grandes terremotos antes citados, han ocurrido durante los últimos 25 años 115 temblores de menor intensidad (IV-V). La mayor parte de este número corresponde sin embargo á la parte comprendida entre el lago de Bay y el seno de Balayán, por no existir ni en la cordillera, ni en la costa oriental estación séismica alguna cercana á la línea seismotectónica. De esta parte ENE solo se conocen temblores que tuvieron grande extensión y fueron perceptibles en Manila, Santa Cruz (Laguna), y Baler.

Demostrada la existencia y probable extensión de la línea seismotectónica del Taal, se sigue naturalmente que ésta debe ser la más peligrosa para Manila. Sin embargo, no todos los terremotos en ella originados se hacen sentir igualmente en la Capital. Los que tienen su epicentro entre el lago de Bay y el seno de Balayán se distinguen en Manila por su duración relativamente larga y por la notable lentitud de las ondulaciones, las cuales suelen ser por otra parte de grande amplitud. En muchas ocasiones hemos llamado la atención sobre este fenómeno. Los originados en la parte NE de la línea son de carácter peligroso, por la rapidez de los movimientos, con cambios aparentes de dirección, producidos sin duda por diferentes sistemas de ondulaciones: de tal manera que en igualdad tanto de distancia como de intensidad impresionan mucho más que los del SW.

Tanto por la experiencia que de esto tenemos como por los datos que nos suministra la historia, en muchas ocasiones hemos designado la cordillera al ENE y E de Manila como el sitio donde originan los terremotos más peligrosos para la capital del Archipiélago. La primera vez que emitimos esta idea fué en 1895 al examinar las direcciones dominantes de 211 diferentes temblores de tierra registrados en el Observatorio desde 1869.[1]

**Línea seismotectónica del SW de Luzón.**—Esta parece arrancar del NW de Mindoro, entre el Cabo Santiago y las islas de Lubang, siguiendo luego casi paralela á la costa SW de Luzón hasta la latitud ó altura de Cabo Bolinao. Probablemente esta línea sigue el escarpe irregular submarino que existe á lo largo de las costas de Cavite y de Zambales y á poca distancia de ellas, donde la sonda salta de menos de 100 á más de 1,000 brazas (220 á 2,200 metros). Semejante escarpe ó pendiente brusca se encuentra también á lo largo de las costas de Ilocos é indica probablemente una línea seismotectónica que afecta aquellas provincias.

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[1] "La Seismología en Filipinas," págs. 107 y 108. "Report on the Seismic and Volcanic Centers of the Philippine Archipelago," pág. 25. "Volcanoes and Seismic Centers of the Philippine Archipelago," pág. 77.

Como originados en esta línea del SW de Luzón, desde las islas Lubang al Cabo Bolinao, encontramos en nuestro Catálogo los siguientes terremotos: 1852, dos en 1872, 1878, 1880, 1902; total seis terremotos comprendidos entre VI y IX de la escala De Rossi-Forel y señalados en el Catálogo con los Nos. 49, 84, 90, 107, 118, 185. La mayor parte de estos terremotos se sintieron con igual intensidad á lo largo de las costas y provincias tanto de Cavite como de Bataan y Zambales. Solamente el de 1872, correspondiente al No. 84, parece haber tenido un área meizoséismica muy reducida. El número de temblores de menor importancia que encontramos en las listas de 1880–1911, son 59, entrando solo en cuenta los de extensión é intensidad suficientes para poder determinar con alguna aproximación su epicentro.

**Línea seismotectónica del E de Luzón.**—Además de las dos mencionadas parece existir otra que tal vez atraviesa todo el Archipiélago, cerca del meridiano 122° E desde las islas Batanes [1] hasta el W de Mindanao. Al NE de Manila se cruza con la del Taal en el seno de Baler y sigue hacia el S por entre la costa oriental de Luzón y la isla Polillo, atraviesa el istmo de Atimonan por el ESE del volcán Banahao, en dirección á la parte W de la isla de Marinduque.

Los caracteres geográficos exteriores de esta línea en la parte correspondiente al S de Luzón no dejan de ser singulares: después de cruzarse con la del Taal, pasa muy cerca del extremo NW de la profunda fosa marina que bordea las costas de Mindanao, Visayas, y SE de Luzón: entra luego en el estrecho que separa las costas de Luzón de la pequeña isla Polillo en dirección á la bahía de Lamón é istmo de Atimonan. Toda esta región es notable por los cambios bruscos que sufren las líneas tectónicas; en el istmo la cordillera oriental parece torcer súbitamente hacia el W; mientras que tanto la isla Polillo como otras más pequeñas de la bahía de Lamón conservan una dirección SE–NW, más en armonía con la dirección de las líneas tectónicas de Camarines. Toda el área ocupada por los senos de Lamón y Baler aparece como una discontinuación ó fractura de la línea general tectónica que formaría un grande arco SE–NW y luego S–N desde Camarines hasta el extremo NE de Luzón; como si este grande seno del E de Luzón tuviera relación con el inmenso y progresivo hundimiento que dió por resultado la gran fosa antes citada, la cual es posible esté aún en formación, según son frecuentes los temblores de tierra en todo su borde occidental y en su extremo NW que termina en el citado seno de Baler.

Los grandes macizos que constituyen el volcán extincto Banahao parecen quedar algo al W de la línea seismotectónica, si bien forman sin duda parte de ella. La isla de Marinduque por el contrario queda algo al E á juzgar por gran número de terremotos que realmente parecen tener el epicentro entre esta isla y la de Mindoro. Este epicentro puede muy bien corresponder al cruce de la línea que nos ocupa, con otra que probablemente corre desde Masbate hacia el estrecho de Isla Verde, que separa Luzón de Mindoro.

Corresponden á esta línea del E los terremotos cuyo epicentro se hallaba: (*a*) cerca de la costa oriental de Luzón, al E del lago de Bay y del volcán Banahao; (*b*) en ó cerca del istmo de Atimonan; (*c*) entre las islas de Marinduque y Mindoro. Los principales ocurrieron en 1730, 1743, 1830, 1869, 1873, 1880, 1884, 1895, and 1901, y llevan en el Catálogo los Nos. 25, 26, 46, 71, 94, 95, 115, 131, 163, 164, y 180. El número de otros de menor importancia es de 41 en el período 1880–1911.

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[1] "Contributions to the Physiography of the Philippine Islands. By H. G. Ferguson (division of mines)." "Earthquakes of the Batanes Islands and Southern Formosa. By Rev. Miguel Saderra Masó, S. J." (Monthly Bulletin for March, 1909.)

Los terremotos originados en esta línea se han distinguido con frecuencia por lo pequeño de su área de acción, afectando solo unas veces la parte oriental de las provincias de La Laguna y de Tayabas, otras el NE de Mindoro, ó la isla de Marinduque; de manera que bajo este respecto podrían considerarse como volcánicos, por más que muchos de ellos tuvieron evidentemente su origen á bastante distancia al N, E, y S del volcán extincto Banahao. Además se nota que las ondas séismicas con dificultad se propagan hacia la inmediata cordillera de Camarines.

**Línea de Zambales.**—La cordillera de Zambales parece constituir también una línea seismotectónica, pero muy secundaria. Los temblores en ella originados se distinguen más por su extensión que por su intensidad: siéntense principalmente en los terrenos de aluvión de las provincias de Bataan, Pampanga, y Tarlac. Existe una línea de fractura [1] que partiendo del W del seno de Balayán pasa por el E de los montes más occidentales de la provincia de Cavite y probablemente continua al E. de la cordillera de Zambales y termina en el golfo de Lingayén.

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[1] G. I. Adams, loc. cit.

# BULLETIN FOR DECEMBER, 1911.

# METEOROLOGICAL BULLETIN FOR DECEMBER, 1911.

By Rev. José Coronas, S. J.,
*Assistant Director of the Weather Bureau.*

## GENERAL WEATHER NOTES.

**Pressure and temperature.**—With the exception of a few situated in northern Luzon, all the stations within the Philippines report a mean monthly pressure in excess of that for December of the preceding year. The highest readings occurred, as a rule, on the 21st, the lowest on the 7th, 8th, or 9th.

The mean monthly temperature differed everywhere very little from the corresponding value for December, 1910. The extremes for Manila were 33.5° C. and 17.2° C., the former having been observed on the 24th and 25th, the latter on the 23d.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS FOR DECEMBER, 1911.

| Station. | Pressure. | | | | | | Temperature. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from December, 1910. | Highest mean. | Day. | Lowest mean. | Day. | Mean. | Departure from December, 1910. | Highest. | Day. | Lowest. | Day. |
| | *mm.* | *mm.* | *mm.* | | *mm.* | | *°C.* | *°C.* | *°C.* | | *°C.* | |
| Tagbilaran | 759.48 | +1.11 | 761.71 | 21 | 757.21 | 6 | 25.9 | ---- | 34.3 | 23 | ---- | ---- |
| Cebu | 59.56 | +1.48 | 61.93 | 21 | 57.22 | 7 | 26.4 | +0.2 | 32.6 | 9 | 20.7 | 7 |
| Iloilo | 59.58 | +1.21 | 61.92 | 21 | 57.50 | 7 | 26.1 | — .1 | 32.2 | 11 | 21.3 | 9 |
| Ormoc | 59.81 | +1.54 | 62.26 | 21 | 57.33 | 7 | 26 | ---- | 32 | 16 | 19.5 | 19 |
| Tacloban | 60.08 | ---- | 62.76 | 21 | 56.63 | 7 | 26.1 | + .3 | 32.8 | 18, 21 | 21 | 19 |
| Capiz | 60.31 | +1.35 | 62.86 | 21 | 57.57 | 7 | 26.2 | — .1 | 32.4 | 27 | 21.6 | 8 |
| Calbayog | 60.12 | +1.49 | 62.76 | 21 | 56.51 | 7 | 25.7 | + .3 | 32.9 | 16 | 20.9 | 19 |
| Legaspi | 60.51 | +1.31 | 63.35 | 21 | 56.30 | 7 | 26.7 | + .7 | 33.1 | 10 | 20.3 | 9 |
| Atimonan | 60.84 | + .95 | 63.56 | 24 | 56.41 | 8 | 26.4 | + .6 | 32.2 | 10 | 21.3 | 17 |
| Paracale | 61.05 | +1.08 | 63.82 | 21 | 56.14 | 8 | 26.1 | + .4 | 32.7 | 10 | 21 | 14 |
| Manila | 60.78 | + .94 | 63.48 | 21 | 56.61 | 8 | 24.9 | + .1 | 33.5 | 24, 25 | 17.2 | 23 |
| San Isidro | 60.99 | +1.21 | 63.83 | 21 | 56.43 | 8 | 24.9 | + .3 | 33.3 | 2 | 16.5 | 31 |
| Dagupan | 60.45 | +1 | 63.07 | 21 | 55.56 | 8 | 25.4 | — .4 | 34.7 | 13 | 18.1 | 23 |
| Bolinao | 60.32 | +1.01 | 63.03 | 21 | 55.56 | 9 | 25.8 | — .4 | 32.7 | 18 | 18.6 | 31 |
| Baguio[a] | 637.59 | + .67 | 640.05 | 21 | 632.82 | 9 | 17.5 | + .2 | 24.8 | 4, 22 | 12.4 | 29 |
| Vigan | 760.40 | + .70 | 763.16 | 21 | 752.10 | 9 | 25.4 | — .8 | 31.9 | 3 | 20.1 | 26 |
| Tuguegarao | 61.46 | — .07 | 65.09 | 21 | 50.90 | 8 | [b]24.2 | + .6 | [b]34.6 | 5 | [b]17 | 28 |
| Aparri | 61.42 | — .64 | 64.65 | 21 | 52.42 | 9 | 24 | + .4 | 30.5 | 18 | 18.7 | 28 |

[a] The barometric readings of this station are not reduced to sea level.

[b] 29 days of observation.

**Precipitation.**—The subjoined table shows that in nearly all the stations situated north of Manila the rainfall was more abundant than during December, 1910; but at Manila and in the rest of the Archipelago south of the capital, the total amount of precipitation during the month remained considerably below that of the same month of the preceding year. The rain gauges of the Central Observatory collected only 8 millimeters of water which is 53.3 millimeters less than the normal for December.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF DECEMBER, 1911.

| Station. | Total. | Departure from Dec., 1910. | Rainy days. | Departure from Dec., 1910. | Greatest rainfall in a single day. | Day. | Station. | Total. | Departure from Dec., 1910. | Rainy days. | Departure from Dec., 1910. | Greatest rainfall in a single day. | Day. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | *mm.* | | | *mm.* | | | *mm.* | *mm.* | | | *mm.* | |
| Jolo | 90.5 | ------- | 4 | ---- | 52.1 | 15 | Sumay, Guam | 50.8 | − 72.4 | 17 | − 3 | 8.9 | 9 |
| Isabela, Basilan | 97.2 | − 58.6 | 7 | − 4 | 49.8 | 15 | Virac | 92.2 | −515.7 | 22 | − 2 | 25.1 | 7 |
| Zamboanga | 88.6 | −153.4 | 6 | 0 | 49.5 | 25 | Nueva Caceres | 42.4 | −411.2 | 10 | − 9 | 14.2 | 16 |
| Davao | 198.5 | −116.3 | 14 | + 6 | 24.4 | 6 | Batangas | 37.4 | −123.1 | 6 | − 8 | 13.5 | 16 |
| Cagayan, Misamis | 60.6 | ------- | 11 | ---- | 23.6 | 25 | Atimonan | 57.6 | −350.3 | 14 | −10 | 15.5 | 16 |
| Butuan | 247.5 | − 66.6 | 23 | 0 | 65.5 | 3 | Silang | 44.3 | −179.7 | 9 | − 3 | 13.5 | 16 |
| Dumaguete | 53.6 | −124.1 | 11 | − 4 | 24.1 | 15 | Paracale | 119.8 | −518.1 | 23 | − 6 | 20.3 | 3 |
| Yap, Western Carolines | 119.5 | − 73.2 | 27 | + 5 | 23.1 | 1 | Santa Cruz, La Laguna | 58.6 | −169.7 | 13 | − 7 | 44 | 16 |
| Tagbilaran | 32.4 | −175.7 | 7 | −12 | 10.4 | 13 | Manila | 8 | −101.8 | 3 | − 8 | 6.6 | 16 |
| Surigao | 390.7 | −261.7 | 26 | + 2 | 126.5 | 3 | Antipolo | 5.6 | −106.4 | 3 | −10 | 4.3 | 16 |
| Maasin | 318.5 | − 50.4 | 11 | − 1 | 73.4 | 3 | Iba | 37.1 | + 12.9 | 2 | − 1 | 26.7 | 8 |
| Cebu | 66.8 | − 79.9 | 14 | − 4 | 37.1 | 9 | San Isidro | 19.8 | − 2.9 | 5 | − 2 | 12.7 | 8 |
| Iloilo | 48.9 | −103 | 9 | −12 | 24.9 | 11 | Tarlac | 29.4 | + 18.2 | 3 | 0 | 26.1 | 8 |
| San Jose Buenavista | 0 | ------- | 0 | ---- | 0 | 0 | Baler | 114.6 | ------- | 16 | ---- | 20.1 | 8 |
| Cuyo | 0 | −119.1 | 0 | − 6 | 0 | 0 | Dagupan | 30.3 | + 29.5 | 3 | + 2 | 17.3 | 8 |
| Ormoc | 42.1 | −149.4 | 13 | −12 | 25.1 | 14 | Bolinao | 32.6 | + 31.7 | 3 | + 1 | 17.2 | 8 |
| Guiuan | 213.1 | ------- | 24 | ---- | 39.4 | 3 | Baguio | 276.6 | +273.8 | 3 | 0 | 184 | 9 |
| Tacloban | 140.8 | −274.9 | 24 | − 4 | 23.6 | 3 | San Fernando, Union | 42.8 | + 37.7 | 3 | + 2 | 30.2 | 8 |
| Capiz | 37.2 | −109.8 | 16 | − 9 | 10.6 | 14 | Echague | 57.5 | − 70.7 | 11 | − 9 | 21.9 | 8 |
| Borongan | 278.8 | −360 | 28 | − 2 | 54.6 | 2 | Candon | 49.2 | + 45.4 | 2 | + 1 | 40.6 | 8 |
| Calbayog | 53.8 | −233.9 | 12 | −15 | 15 | 3 | Vigan | 33.5 | + 32.7 | 4 | + 3 | 25.8 | 8 |
| Masbate | 44.6 | −173.9 | 12 | −12 | 19.6 | 14 | Tuguegarao | 284 | + 20.9 | 10 | + 1 | 185.1 | 8 |
| Romblon | 43.3 | −269.4 | 12 | −14 | 10.9 | 2 | Laoag | 44.6 | + 43.3 | 4 | + 3 | 23.3 | 9 |
| Laoang | 109.6 | ------- | 21 | ---- | 25.1 | 9 | Aparri | 353.6 | + 84.6 | 11 | − 6 | 180.6 | 8 |
| Gubat | 83.8 | ------- | 12 | ---- | 28.7 | 14 | Santo Domingo, Batanes Is. | 449.1 | + 87.4 | 18 | − 7 | 80.8 | 16 |
| Legaspi | 71.7 | −581.8 | 16 | −11 | 30.9 | 19 | | | | | | | |

## DEPRESSIONS AND TYPHOONS.

During the entire month there occurred only one atmospheric disturbance of sufficient importance to merit special mention—the typhoon which crossed northern Luzon during the afternoon and night of December 8. Its track is shown on Plate XVI which contains likewise those of the depressions and typhoons of November, as was stated in the Bulletin for the latter month.

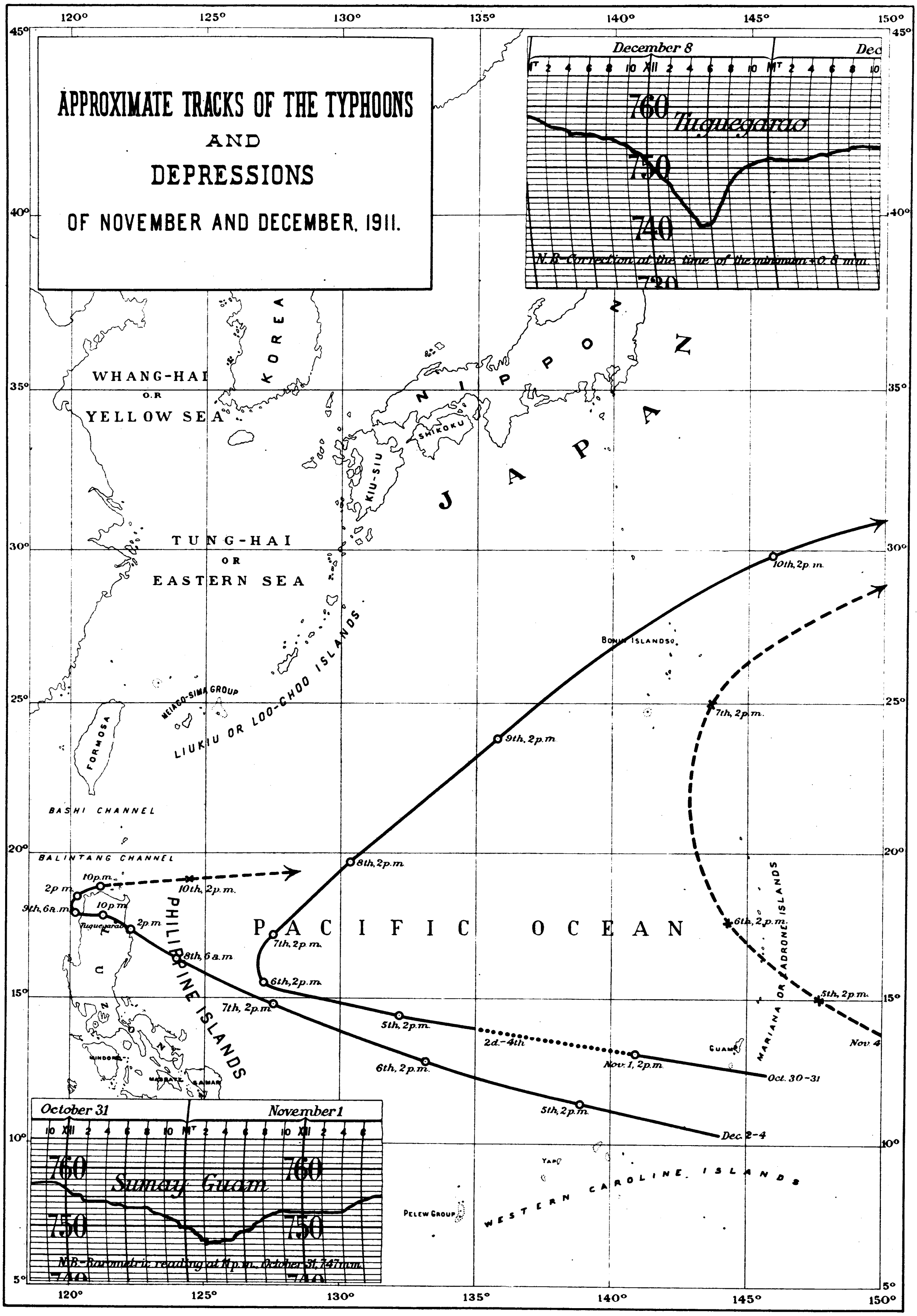
### THE TYPHOON OF DECEMBER 2 TO 11, 1911.

In the following table we give the observations made at Sumay, Guam, on December 2 to 5 and at Yap, Western Carolines, on the 3d to 6th. They show that the storm was forming on December 2 to 4, near the northern part of the Western Carolines, to the south or SbyW of Guam. In the beginning the typhoon moved toward WbyN, crossing north of Yap in the afternoon of the 5th.

METEOROLOGICAL OBSERVATIONS FOR DECEMBER 2 TO 6, 1911.

| Sumay, Guam, Ladrone Islands. | | | | | | Yap, Western Carolines. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfall (daily total). | Date and hour. | Pressure. | Difference in 24 hours. | Wind. | | Rainfall (daily total). |
| | | | Direction. | Force. | | | | | Direction. | Force. | |
| Dec. 2: | *mm.* | *mm.* | | *0-12.* | *mm.* | Dec. 3: | *mm.* | *mm.* | | *0-12.* | *mm* |
| 6 a. m | 758.42 | − .98 | ENE | 3 | ------- | 6 a. m | 756.60 | −1.20 | N | 1 | ------- |
| 2 p. m | 56.55 | −1.50 | ENE | 4 | 1.3 | 2 p. m | 55.36 | − .19 | NNW | 1 | 11.7 |
| Dec. 3: | | | | | | Dec. 4: | | | | | |
| 6 a. m | 57.47 | − .95 | ENE | 3 | ------- | 6 a. m | 56.02 | − .53 | N | 1 | ------- |
| 2 p. m | 56.33 | − .22 | ENE | 4 | ------- | 2 p. m | 55.18 | − .18 | NE | 1 | 10.9 |
| Dec. 4: | | | | | | Dec. 5: | | | | | |
| 6 a. m | 56.27 | −1.20 | ENE | 6 | ------- | 1 a. m | 55.59 | − .90 | N | 2 | ------- |
| Noon | 55.55 | −2.10 | ENE | 7 | ------- | 6 a. m | 54.44 | −1.63 | W | 1 | ------- |
| 1 p. m | 54.55 | −2.30 | ENE | 8 | ------- | 10 a. m | 54.58 | −1.90 | WNW | 3 | ------- |
| 2 p. m | 54 | −2.33 | ENE | 7 | ------- | Noon | 53.22 | −2.60 | W | 4 | ------- |
| 3 p. m | 54.20 | −1.90 | ENE | 8 | ------- | 2 p. m | 52.16 | −3.02 | W | 3 | 3 |
| 5 p. m | 54.50 | −1.90 | ENE | 6 | 6.3 | 4 p. m | 52.11 | −2.60 | WSW | 3 | ------- |
| Dec. 5: | | | | | | Dec. 6: | | | | | |
| 6 a. m | 56.20 | − .07 | ESE | 5 | ------- | 6 a. m | 55.55 | +1.11 | E | 2 | ------- |
| 2 p. m | 56.38 | +2.38 | ESE | 4 | 2.5 | 2 p. m | 55.65 | +3.49 | SE | 1 | 5.4 |

Plate XVI.



The barographic curve of Sumay, Guam, does not agree with the direct observations furnished by the observer. The track of the typhoon given in this plate is based on the direct observations, and not on the curve.

Thanks to the cabled reports from Guam and Yap, Manila Observatory was able to send on the 4th and 5th the following storm warnings to Tokyo, Zikawei, Taihoku, Hongkong, and Phulien:

> December 4, 11.40 a. m.: Typhoon south of Guam; direction unknown.
>
> December 5, 8 a. m.: Typhoon north of the Western Carolines, moving west.

On the 6th it became clear that the storm was threatening the Philippines; wherefore the following statement was made in the ordinary weather note for that day:

> The typhoon lies this morning northwest of Yap and is moving apparently to WbyN, toward the Philippines. Hence a change of the weather is to be expected in the Visayas, and especially in Luzon, within the next two days and possibly by to-morrow.

On the 7th the typhoon was found to have a more northerly inclination, moving then approximately toward west-northwest which direction it maintained until 9 or 10 p. m. of the 8th. At the latter time the vortex was within Luzon Island, in the southern part of Cagayan Province, where for the space of seven to eight hours—that is to say, until about 5 a. m. of the 9th—it advanced almost due westward, a course which caused it to pass nearly midway between Vigan and Laoag.

The passage of the vortex through Cagayan Province, north of and very close to Tuguegarao, is clearly marked in the observations made at that station on December 8, which form the subject of the following table. At 5 p. m. of the said day, the barometer at Tuguegarao fell to 741.21 millimeters, with hurricane winds from northwest which later veered to southwest and south-southwest.

METEOROLOGICAL OBSERVATIONS AT TUGUEGARAO, DECEMBER 7 TO 9, 1911.

| Date and hour. | Pressure. | Difference in 24 hours. | Wind. |  | Weather. | Rainfall (daily total). |
|---|---|---|---|---|---|---|
|  |  |  | Direction. | Force. |  |  |
| Dec. 7: | *mm.* | *mm.* |  | *0-12* |  | *mm.* |
| 6 a. m | 760.56 | — 0.25 | NW | 2 | b |  |
| 2 p. m | 58.94 | — 0.05 | NW | 2 | o | 16.7 |
| Dec. 8: |  |  |  |  |  |  |
| 2 a. m | 57.11 | — 2.81 | NW | 4 | orq |  |
| 4 a. m | 55.52 | — 4.40 | NW | 4 | oq |  |
| 6 a. m | 55.33 | — 5.23 | NW | 4 | orq |  |
| 8 a. m | 55.15 | — 6.40 | NW | 5 | orq |  |
| 10 a. m | 53.66 | — 7.70 | NW | 5 | orq |  |
| 11 a. m | 52.78 | — 7.90 | NW | 4 | orq |  |
| Noon | 50.65 | — 9.60 | NW | 4 | orq |  |
| 1 p. m | 49.53 | —10.30 | NW | 5 | orq |  |
| 2 p. m | 47.55 | —11.39 | NW | 6 | orq |  |
| 3 p. m | 45.52 | —13 | NW | 7 | orq |  |
| 4 p. m | 43.15 | —15.40 | NW | 10 | orq |  |
| 5 p. m | 41.21 | —17.60 | NW | 11 | orq |  |
| 6 p. m | 41.33 | —17.56 | NW | 11 | orq |  |
| 6.25 p. m |  |  | Calm |  |  |  |
| 6.50 p. m |  |  | SW | 3 |  |  |
| Dec. 8: | *mm.* | *mm.* |  | *0-12* |  | *mm.* |
| 7 p. m | 743.40 | —15.70 | SW | 8 | orq |  |
| 8 p. m | 47.21 | —11.70 | SSW | 11 | orq |  |
| 9 p. m | 49.25 | — 9.40 | SSW | 5 | orq |  |
| 10 p. m | 50.45 | — 7.96 | SSW | 3 | or | 185.1 |
| Dec. 9: |  |  |  |  |  |  |
| 2 a. m | 51.17 | — 5.94 | SSW | 2 | or |  |
| 6 a. m | 52.13 | — 3.20 | Calm |  | or |  |
| 10 a. m | 54.15 | + .49 | SW | 1 | or |  |
| 2 p. m | 52.22. | + 4.67 | Calm |  | or |  |
| 6 p. m | 52.07 | +10.74 | SW | 2 | o |  |
| 10 p. m | 52.51 | + 2.06 | SE | 3 | od | 19.5 |
| Dec. 10: |  |  |  |  |  |  |
| 2 a. m | 54.21 | + 3.04 | SE | 1 | c |  |
| 6 a. m | 54.03 | + 1.90 | Calm |  | cd |  |
| 10 a. m | 56.19 | + 2.04 | NW | 1 | o |  |
| 2 p. m | 54.18 | + 1.96 | NW | 3 | o |  |
| 6 p. m | 55.09 | + 3.02 | NW | 3 | o |  |
| 10 p. m | 56.71 | + 4.20 | Calm |  | o | 19.3 |

The following storm warnings were issued by Manila Observatory on December 6 to 8:

> December 6, 9.10 a. m.: Typhoon northwest of Yap (Western Carolines), moving west or west-northwest.
>
> December 7, 9.25 a. m.: Typhoon east of southern Luzon, moving west-northwest.
>
> December 8, 9.10 a. m.: Typhoon northeast of Manila, moving west-northwest or northwest.
>
> December 8, 5 p. m.: Typhoon crossing northern Luzon, moving west-northwest or northwest.

The position of the center on the 8th was stated more precisely in the ordinary weather note for that day:

> The typhoon is situated this morning northeast of Manila not far from the eastern coast of Luzon, between 16° and 18° latitude north; it is moving apparently to west-northwest or NWbyW.

At 4 p. m. of the same day the following special weather note was sent to the daily papers of the capital:

> The typhoon is entering this afternoon the Province of Cagayan. It will probably pass between Tuguegarao and Aparri, moving northwestward.

A detailed comparison of the observations made on the 9th at Vigan, Laoag, Aparri, and Santo Domingo (Batanes) leaves no doubt whatever that, once in the China Sea, the typhoon recurved very pronouncedly toward north, northeast, and east, while in the vicinity of the northwestern coasts of Luzon. During the night of December 9 to 10, the vortex passed through the neighborhood of the Babuyanes Islands, headed for the Pacific Ocean. With equal confidence we may state that the storm had abated in intensity since it entered Luzon Island in the afternoon of the 8th.

On December 9 and 10, Manila Observatory cabled the following notices to the other observatories in the Far East:

> December 9, 10.30 a. m.: Typhoon near or over Aparri, inclining northward.
>
> December 10, 10.25 a. m.: Typhoon near or over Balintang Channel, moving northeast or east-northeast.
>
> December 10, 6.15 p. m.: Typhoon east of Balintang Channel, moving east.

## NOTAS GENERALES DEL TIEMPO.

**Presión y temperatura.**—Si exceptuamos unas pocas estaciones en el norte de Luzón, todas las demás de Filipinas nos dan una media mensual de la presión atmosférica mayor que la de Diciembre del año próximo pasado. Las mayores presiones fueron registradas generalmente el día 21, y las menores los días 7, 8 ó 9.

La temperatura media mensual se diferencia muy poco de la de Diciembre, 1910. Los valores extremos para Manila fueron 33.5 °C y 17.2 °C, habiendo sido registrados el primero los días 24 y 25, y el segundo el día 23.

**Precipitación acuosa.**—Según puede verse en la tabla que acompaña el texto inglés, en casi todas las estaciones al norte de Manila se recogió este mes una suma total de lluvia mayor que la de Diciembre, 1910: mas en Manila y en lo restante del Archipiélago al sur de Manila la lluvia caída en todo el mes fué este año bastante menor que el año pasado. En los pluviómetros de Manila no se recogieron más que 8 mm. de agua, cantidad que difiere de la normal en — 53.3 mm.

## DEPRESIONES Y TIFONES.

En todo este mes no hubo más que una perturbación atmosférica digna de especial mención y es el baguio que atravesó la parte norte de la Isla de Luzón durante la tarde del día 8 y noche del 8 al 9. Véase su trayectoria en la lámina XVI, en la cual incluimos también las de las depresiones y tifones de Noviembre, según dijimos en el boletín de dicho mes.

### EL TIFÓN DE 2 A 11 DE DICIEMBRE DE 1911.

En el texto inglés hemos reunido en una tabla las observaciones hechas en Sumay, Guam, del 2 al 5 de Diciembre, y en Yap, Carolinas Occidentales, del 3 al 6. Según ellas, se estaba formando un baguio, del 2 al 4 de Diciembre, cerca de la parte septentrional de las Carolinas Occidentales hacia el S o S ¼ SW de Guam. Emprendió al principio este baguio su marcha al W ¼ NW, pasando por el norte de Yap la tarde del día 5.

Gracias a los servicios telegráficos que recibimos de Yap y Guam, el Observatorio de Manila pudo enviar los días 4 y 5 los siguientes avisos de tifón a los Observatorios de Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 4, 11.40 a. m.: Tifón al S de Guam; dirección desconocida.
Día 5, 8 a. m.: Tifón al N de las Carolinas Occidentales, moviéndose al W.

El día 6 se vió ya que el tifón era peligroso para Filipinas, y así se dijo en la nota ordinaria del tiempo lo siguiente:

> El tifón se halla esta mañana al NW de Yap y se mueve aparentemente al W ¼ NW en dirección a Filipinas. De ahí que es de esperar un cambio de tiempo en las Visayas, y especialmente en Luzón, dentro de los dos días siguientes, y aún tal vez desde mañana.

Desde el día 7 el tifón se movió algo más inclinado al N siguiendo la dirección WNW próximamente hasta las 9 o 10 p. m. del 8. Hallábase entonces el vórtice dentro de la Isla de Luzón en la parte meridional de la provincia de Cagayán, cuando por espacio de unas 7 o 8 horas, es decir, hasta eso de las 5 a. m. próximamente se dirigió casi exactamente al W, viniendo de esta suerte a pasar por entre Vigan y Laoag y casi a igual distancia de ambas estaciones.

El paso del vórtice a través de la provincia de Cagayán por el norte y muy cerca de Tuguegarao lo verán nuestros lectores teniendo a la vista las observaciones hechas en esta estación el día 8. (Véanse en una tabla en el texto inglés.) El barómetro bajó hasta 741.21 mm. a 5 p. m. de dicho día con vientos huracanados del NW, los cuales rolaron después al SW y SSW.

Véanse á continuación los avisos de tifón dados por el Observatorio de Manila del 6 al 8 ambos inclusive:

Día 6, 9.10 a. m.: Tifón al NW de Yap, moviéndose al W o WNW.
Día 7, 9.25 a. m.: Tifón al E de la parte sur de Luzón, moviéndose al WNW.
Día 8, 9.10 a. m.: Tifón al NE de Manila, moviéndose al WNW o NW.
Día 8, 5 p. m.: Tifón cruzando la parte norte de Luzón, moviéndose al WNW o NW.

En la nota ordinaria del tiempo del día 8 se precisaba más la posición del baguio en estos términos:

El tifón se halla esta mañana al nordeste de Manila, no lejos de la costa oriental de Luzón, entre los 16° y 18° latitud norte: se mueve aparentemente al WNW o NW¼W.

A las 4 p. m. del mismo día se decía lo siguiente en una nota extraordinaria publicada en los periódicos de la Capital:

El tifón está entrando esta tarde en la provincia de Cagayán. Probablemente pasará por entre Tuguegarao y Aparri moviéndose hacia el NW.

Examinando con detención las observaciones hechas el día 9 en Vigan, Laoag, Aparri y Santo Domingo, Islas Batanes, no cabe la menor duda de que el tifón una vez en el Mar de China verificó una recurva muy pronunciada al N, NE y E cerca de la costa noroeste de Luzón. Durante la noche del 9 al 10 pasaba el vórtice por los alrededores de las islas Babuyanes en dirección al Pacífico. También se puede asegurar que el tifón había disminuído en intensidad desde que penetró en Luzón la tarde del día 8.

El Observatorio de Manila envió estos avisos de tifón á los demás Observatorios del Extremo Oriente los días 9 y 10:

Día 9, 10.30 a. m.: Tifón en, o cerca de, Aparri, inclinándose al norte.
Día 10, 10.25 a. m.: Tifón en el, o cerca del, canal de Balintang, moviéndose al NE o ENE.
Día 10, 6.15 p. m.: Tifón al E del canal de Balintang, moviéndose al E.

## METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[a]

[φ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

| Date. | Pressure, mean. | Air temperature.[b] | | | Underground temperature. | | | | | | Relative humidity, mean. | Vapor pressure, mean. | Evaporation.[b] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | 0.25 meter. | | 0.50 meter. | | 1.50 meters. | 2.50 meters. | | | Free exposure, total. | Shelter, total. |
| | | | | | 8 a. m. | 2 p. m. | 8 a. m. | 2 p. m. | 8 a. m. | 8 a. m. | | | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | *Per ct.* | *mm.* | *mm.* | *mm.* |
| 1 | 761.07 | 24.1 | 32.9 | 18 | 24.9 | 27 | 26.3 | 26.8 | 27.7 | 27.9 | 75.3 | 16.4 | 4.4 | 3.2 |
| 2 | 60.42 | 24.6 | 32.4 | 19.4 | 25 | 26.8 | 26.3 | 26.8 | 27.7 | 28.1 | 77.8 | 17.8 | 3.7 | 2.7 |
| 3 | 60.43 | 24.6 | 32.4 | 18 | 25 | 27 | 26.3 | 26.5 | 27.7 | 28 | 77.9 | 17.7 | 3.8 | 2.9 |
| 4 | 59.86 | 24.9 | 31.5 | 21 | 25.2 | 26.9 | 26.3 | 26.6 | 27.6 | 28 | 80.2 | 18.6 | 3 | 2.2 |
| 5 | 59.59 | 25.3 | 32.4 | 21 | 25.6 | 27.3 | 26.4 | 26.7 | 27.5 | 28.1 | 78.7 | 18.7 | 3.7 | 2.9 |
| 6 | 59.07 | 24.8 | 31.8 | 20.4 | 25.3 | 26.7 | 26.4 | 26.7 | 27.5 | 27.8 | 78.8 | 18.1 | 3 | 2.4 |
| 7 | 57.99 | 25.4 | 32 | 20.6 | 25.2 | 26.9 | 26.3 | 26.7 | 27.5 | 28 | 74.1 | 17.5 | 5 | 3.8 |
| 8 | 56.61 | 25.9 | 29.7 | 22.3 | 25.8 | 26.7 | 26.5 | 26.7 | 27.4 | 28 | 83.6 | 20.7 | 3.1 | 2.2 |
| 9 | 56.96 | 27.1 | 31.8 | 24.8 | 26.2 | 28.3 | 26.8 | 27 | 27.5 | 28.1 | 84 | 22.3 | 3.5 | 2.2 |
| 10 | 57.01 | 26.8 | 31.4 | 23.6 | 26.8 | 29.4 | 27 | 27.5 | 27.5 | 28.2 | 82.9 | 21.7 | 3.9 | 2.6 |
| 11 | 57.61 | 26.9 | 32.7 | 24.3 | 27.1 | 28.7 | 27.3 | 27.7 | 27.4 | 28.1 | 78.7 | 20.7 | 3.2 | 2.5 |
| 12 | 59.74 | 25.9 | 32 | 22.5 | 27 | 28.3 | 27.5 | 27.7 | 27.4 | 28.1 | 81.6 | 20.2 | 2.5 | 2.2 |
| 13 | 60.76 | 25.6 | 33.1 | 19.9 | 26 | 28.1 | 27.4 | 27.5 | 27.4 | 28 | 71.2 | 17 | 6.1 | 4.3 |
| 14 | 61.36 | 24.4 | 30.6 | 20 | 25.7 | 27 | 26.8 | 27.2 | 27.3 | 27.9 | 75.9 | 17.1 | 3.7 | 2.8 |
| 15 | 61.38 | 24.9 | 32.1 | 20.2 | 25.4 | 26.8 | 26.8 | 27 | 27.5 | 28 | 77.1 | 17.7 | 4.1 | 3.4 |
| 16 | 62.08 | 24.4 | 30.1 | 20.5 | 25 | 26.3 | 26.5 | 26.7 | 27.3 | 27.9 | 83.5 | 18.9 | 1.7 | 1.8 |
| 17 | 62.16 | 25 | 31.6 | 20.7 | 25.6 | 27.4 | 26.5 | 27.4 | 27.2 | 28 | 82.5 | 19.3 | 4.8 | 4.1 |
| 18 | 62.83 | 24.5 | 33.3 | 19 | 25.2 | 27.3 | 26.4 | 26.9 | 27.3 | 28 | 71.7 | 15.9 | 6.6 | 4.8 |
| 19 | 62.12 | 24 | 29.7 | 19.4 | 25.1 | 26.2 | 26.2 | 26.6 | 27.4 | 28 | 85.8 | 19 | 1.6 | 1.8 |
| 20 | 62.60 | 24.6 | 31.8 | 20.6 | 25 | 27 | 26.3 | 26.4 | 27.4 | 28 | 81.7 | 18.6 | 3.1 | 2.1 |
| 21 | 63.48 | 25.1 | 32.5 | 19.9 | 25.1 | 26.4 | 26.3 | 26.6 | 27.4 | 28.1 | 75.8 | 17.6 | 4.4 | 3.5 |
| 22 | 63.14 | 24.4 | 32.9 | 19 | 24.8 | 26.3 | 26.3 | 26.4 | 27.4 | 28 | 70 | 15.4 | 5.7 | 4.2 |
| 23 | 63.20 | 24.1 | 33.3 | 17.2 | 24.1 | 26.3 | 25.9 | 26.4 | 27.3 | 27.9 | 76.6 | 16.8 | 4.6 | 3.3 |
| 24 | 63.27 | 25.1 | 33.5 | 19.3 | 25 | 27 | 26.1 | 26.6 | 27.3 | 28 | 69.9 | 15.8 | 6.6 | 5.1 |
| 25 | 62.27 | 25.8 | 33.5 | 20.6 | 25.1 | 27.7 | 26.1 | 26.4 | 27.3 | 28 | 69.2 | 16.7 | 5.9 | 4.3 |
| 26 | 61.69 | 23.4 | 31.9 | 18.3 | 25 | 26.2 | 26.2 | 26.4 | 27.3 | 27.8 | 73.5 | 15.5 | 4.4 | 2.8 |
| 27 | 61.56 | 25.2 | 32.9 | 18.7 | 24.7 | 26.9 | 25.9 | 26.1 | 27.2 | 27.8 | 67.5 | 15.3 | 7.6 | 6.5 |
| 28 | 61.35 | 24.5 | 31 | 20.3 | 25 | 26.2 | 26 | 26.2 | 27.2 | 28 | 73.5 | 16.5 | 4.6 | 3.6 |
| 29 | 61.46 | 24.1 | 32.4 | 18.9 | 24.7 | 27.1 | 25.8 | 26.3 | 27.2 | 27.9 | 69.9 | 15.2 | 5.2 | 3.9 |
| 30 | 60.60 | 23.8 | 32.1 | 17.4 | 24.5 | 27.4 | 25.6 | 26.4 | 27 | 27.8 | 75.1 | 16.3 | 5.3 | 4 |
| 31 | 60.55 | 23.4 | 30.1 | 17.6 | 24.6 | 26.3 | 25.9 | 26.1 | 27 | 27.9 | 78.4 | 16.6 | 3.5 | 2.7 |
| Mean | 760.78 | 24.9 | 32 | 20.1 | 25.3 | 27.1 | 26.4 | 26.7 | 27.4 | 28 | 76.9 | 17.8 | 4.3 | 3.3 |
| Total | | | | | | | | | | | | | 132.3 | 100.8 |
| Departure from normal | +0.34 | —0.3 | +2.2 | —1.1 | | | | | | | —4.2 | —1.4 | | |

| Date. | Wind. | | | | Clouds. | | | | | Sunshine. | | Rain, 24 hours beginning midnight. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevailing direction. | Total movement. | Maximum hourly velocity. | Direction at the time of the maximum velocity. | Amount (mean). | Prevailing form and its direction. | | | | | | | |
| | | | | | | Upper. | | Lower. | | | | | |
| | | *Km.* | *Km.* | | *0-10.* | | | | | *h.* | *m.* | *mm.* | |
| 1 | W quad. | 88 | 15 | W | 4.5 | A.-Cu. | | Cu. | E | 7 | 20 | | |
| 2 | W quad. | 91 | 14 | WNW | 4.9 | | | Cu. | E | 6 | 30 | | ∞ p. |
| 3 | NE quad. | 104 | 13 | WNW | 4.7 | Ci.-Cu. | | Cu. | E | 7 | 30 | | ∞ p. |
| 4 | NW quad. | 80 | 10 | WNW | 7.8 | A.-Cu. | | Cu. | E | 2 | 00 | | |
| 5 | W quad. | 111 | 15 | NW | 6.8 | A.-Cu. | | Cu. | E | 5 | 15 | | |
| 6 | NE quad. | 119 | 15 | WNW | 8.4 | Ci.-S. | | Cu. | E | 3 | 10 | | T° p. |
| 7 | NE quad. | 166.5 | 29 | NE | 9.2 | Ci.-S. | ESE | Cu. | | 2 | 50 | | |
| 8 | SW quad. | 350 | 35 | SWbyW | 10 | Ci.-S. | | Cu.-N. | W | 0 | 00 | | d° p. |
| 9 | SW quad. | 299.5 | 21.5 | SW | 6.1 | A.-Cu. | W | Cu. | SW | 6 | 10 | | ⌒ d° a. |
| 10 | SW quad. | 296 | 26 | SW | 3.2 | Ci. | | Cu. | SW | 8 | 00 | | ⊕ p. |
| 11 | NW quad. | 182.5 | 14.5 | NW | 6.6 | Ci.-S. | | Cu.-N. | ENE | 5 | 45 | | |
| 12 | E quad. | 153.5 | 12.5 | NE | 7.8 | Ci.-S. | | Cu. | E | 2 | 40 | 0.9 | ●° a. p. |
| 13 | E quad. | 223 | 19.5 | ESE | 3.4 | A.-Cu. | | Cu. | E | 8 | 50 | | |
| 14 | NE quad. | 170 | 20 | NNE | 6.6 | Ci., A.-Cu. | | Cu. | E | 3 | 05 | | d° ⌒² a. |
| 15 | E quad. | 142.5 | 22 | SE | 7.6 | Ci. | | Cu. | E | 5 | 35 | | |
| 16 | N quad. | 150.5 | 16 | N | 9.3 | A.-Cu. | | S.-Cu. | E | 0 | 45 | 6.6 | d a. ● p. |
| 17 | SE quad. | 135 | 16.5 | SE | 4.8 | Ci. | | Cu. | E | 5 | 05 | | |
| 18 | SE quad. | 209.5 | 22 | ESE | 2.7 | Ci. | | Cu. | ESE | 8 | 50 | | |
| 19 | NW quad. | 115 | 13 | W, NW | 9.3 | Ci. | | Cu.-N. | E | 1 | 55 | .5 | d° a. d p. |
| 20 | ESE | 121 | 13 | ESE | 7.4 | A.-Cu. | | Cu.-N. | E | 4 | 10 | | d° p. |
| 21 | E quad. | 200 | 19 | SE | 7.6 | Ci. | | Cu. | E | 5 | 10 | | d° a. |
| 22 | E quad. | 223 | 26 | E | 3.4 | | | Cu. | E | 8 | 00 | | |
| 23 | NE quad. | 145 | 17 | E | 5.6 | | | Cu. | E | 7 | 25 | | |
| 24 | E quad. | 224 | 23 | E | 3.2 | | | Cu. | EbyN | 8 | 20 | | |
| 25 | E quad. | 202.5 | 20 | E | 3.6 | A.-Cu. | | Cu. | E | 7 | 30 | | ⌒ a. |
| 26 | NE quad. | 164 | 21 | E | 6.5 | Ci. | | Cu. | E | 5 | 55 | | |
| 27 | E quad. | 231.5 | 30 | E | 4.4 | A.-Cu., Ci. | | Cu. | E | 8 | 40 | | |
| 28 | E quad. | 136 | 20 | E | 8.4 | A.-Cu. | | Cu. | E | 2 | 10 | | |
| 29 | NE quad. | 133 | 10.5 | W, NNW | 6.4 | Ci. | | Cu. | E | 8 | 05 | | |
| 30 | SE quad. | 184.5 | 18.5 | SE | 5.2 | Ci. | | Cu. | E | 7 | 10 | | |
| 31 | E quad. | 140 | 12.5 | WNW | 6 | A.-Cu. | | S.-Cu. | ENE | 3 | 30 | | d p. |
| Mean | | 170.7 | 18.7 | | 6.2 | | | | | 5 | 24 | | |
| Total | | | | | | | | | | 167 | 20 | 8 | |
| Departure from normal | | +14.8 | | | 0.1 | | | | | +8 | 22 | —53.3 | |

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[a] All the mean values given in this table are deduced from hourly observations.

[b] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

## METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[a]

### TAGBILARAN.

[$\phi$=9° 38′ N; $\lambda$=123° 51′ E; barometer above sea, 26.2 meters; gravity correction not applied, —1.86 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | |
| | | | | | | | | | Upper. | Lower. | | |
| | *mm.* | °*C.* | °*C.* | °*C.* | *P. ct.* | | *0-12.* | *0-10.* | | | *mm.* | |
| 1 | 759.51 | 26.3 | 32.6 | ------ | 76.3 | Variable | 0.7 | 2 | Ci. | Fr.-Cu. N | ------ | |
| 2 | 58.99 | 26.6 | 31.5 | ------ | 82 | N, NNW | .3 | 4 | Ci. | Cu. N, NNE | ------ | |
| 3 | 59.02 | 25.6 | 30.9 | ------ | 88.3 | Variable | .8 | 8.8 | Ci.-S. | Cu. | 9.1 | d° ● a. d° ⌒$^2$ p. |
| 4 | 58.70 | 25.2 | 30.8 | ------ | 91.7 | E, NE | .3 | 7.3 | Ci.-S. | Cu. S | ------ | |
| 5 | 58.41 | 25.5 | 30.8 | ------ | 87.5 | S quad. | .7 | 7.3 | Ci.-S. | Cu. N | ------ | ψ° p. |
| 6 | 57.21 | 26.3 | 32.4 | ------ | 87.5 | NNE, NE | .3 | 7.5 | Ci.-S. | Cu. E | ------ | |
| 7 | 57.24 | 25.4 | 31.7 | ------ | 83 | Variable | .5 | 6.8 | Ci.-S. | Cu. | ------ | ψ$^2$ p. |
| 8 | 58.07 | 25.5 | 31.7 | ------ | 85.7 | S | 1 | 3.2 | Ci. | Fr.-Cu. E | ------ | Ω$^2$ a. |
| 9 | 57.90 | 26.4 | 32.7 | ------ | 85.8 | S, SW | .3 | 3.3 | Ci. | Cu. SE | ------ | Ω$^2$ a. |
| 10 | 57.55 | 26.8 | 31.8 | ------ | 85.3 | S quad. | 1.2 | 3.3 | Ci. | Cu. S quad. | ------ | Ω$^2$ a. |
| 11 | 57.72 | 26.3 | 32.7 | ------ | 90.2 | S quad. | .8 | 4 | Ci. | Cu. SE, SSE | ------ | d° p. |
| 12 | 59.03 | 25.6 | 32.8 | ------ | 87 | S quad. | .8 | 3 | Ci.-S. | Cu. E | 2.5 | ●° p. |
| 13 | 59.42 | 25.5 | 33.1 | ------ | 85.3 | S quad. | 1 | 4.7 | Ci. | Cu. SE, E | 10.4 | Ω° a. ● p. |
| 14 | 59.28 | 25.9 | 32.2 | ------ | 86.2 | E | .5 | 4.5 | Ci. | Cu. E | ------ | ●° a. |
| 15 | 59.12 | 25.9 | 33 | ------ | 89.8 | SE, NE | .5 | 5.5 | Ci. | Cu. E | 5.6 | Ω° a. ●° p. |
| 16 | 60.31 | 26.5 | 31.6 | ------ | 85.3 | SE, W | .3 | 7.2 | Ci.-S. | Fr.-N., Cu. E, S | ------ | |
| 17 | 60.42 | 26.6 | 32 | ------ | 79.5 | E | 1 | 5.7 | Ci.-S. | N. SSE | ------ | |
| 18 | 61.31 | 25.3 | 30.9 | ------ | 84.5 | SE quad. | 1.7 | 4 | Ci. | Cu. | 1 | ●° ⌒° d° p. |
| 19 | 60.58 | 25.9 | 33 | ------ | 77.8 | S | .7 | 1.5 | Ci. | Cu. SE, E | ------ | Ω$^2$ a. |
| 20 | 61.17 | 25.5 | 31.8 | ------ | 83.7 | SE | .7 | 2.3 | Ci. | Fr.-Cu. ESE, SE | ------ | Ω$^2$ a. |
| 21 | 61.71 | 26.6 | 34.2 | ------ | 76.3 | SE quad. | 1 | 1.5 | Ci. | Cu. E | ------ | Ω° a. |
| 22 | 61.47 | 26.4 | 32.8 | ------ | 78.3 | NE | 1.2 | 2.7 | Ci. | Fr.-Cu., Cu. E | ------ | Ω° ⌒$^2$ a. d° a. p. |
| 23 | 60.98 | 26.9 | 34.3 | ------ | 75 | SSE, NE | 1.2 | 2.5 | Ci. | Fr.-Cu. E | ------ | Ω° a. |
| 24 | 61.23 | [b]26.2 | 33.9 | ------ | [b]72.4 | NE | 1.2 | 2.2 | A.-Cu. SE | Cu. | ------ | |
| 25 | 60.31 | 25.8 | 31.3 | ------ | 79.7 | SE | .2 | 5.3 | Ci.-S. | Fr.-N. ENE | ------ | |
| 26 | 60 | 25.2 | 30.6 | ------ | 83.2 | E, NE | .5 | 7.7 | Ci.-S. | Cu. | ------ | d° p. |
| 27 | 59.54 | 25.6 | 30.7 | ------ | 81.7 | SE, E | .7 | 3.5 | Ci., Ci.-S. | Cu. | ------ | |
| 28 | 59.71 | 25.6 | 33.7 | ------ | 79 | E quad. | 1 | 5.7 | Ci., Ci.-S. | Fr.-N. ENE | ------ | |
| 29 | 59.44 | 25.5 | 31.2 | ------ | 84.8 | SE | .8 | 9.2 | Ci.-S. | Cu., Fr.-N. NE | ------ | d° a. p. |
| 30 | 59.16 | 25.8 | 32.5 | ------ | 85.5 | Variable | .5 | 9.5 | Ci.-S. | Cu., Fr.-N. E | 3.8 | ●° p. |
| 31 | 59.40 | 25.7 | 32.4 | ------ | 86.2 | ENE, E | .3 | 6 | Ci.-S. | Cu., Fr.-N. ESE, E | ------ | |
| Mean | 759.48 | 25.9 | 32.2 | ------ | 83.4 | ------------ | .7 | 4.9 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 32.4 | |

### CEBU.

[$\phi$=10° 18′ N; $\lambda$=123° 34′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.84 mm.]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *mm.* | °*C.* | °*C.* | °*C.* | *P. ct.* | | *Km.p.h* | *0-10.* | | | *mm.* | |
| 1 | 759.60 | 26.5 | 31 | 22.7 | 70.8 | ENE, E | 10.6 | 0 | Ci. | Cu. | ------ | Ω a. |
| 2 | 59.08 | 25.8 | 31.5 | 22 | 80.5 | NE quad. | 10.7 | 3.3 | Ci., Ci.-S. | Cu. | 2.3 | Ω a. d°● ⊽ ψ p. |
| 3 | 58.97 | 26 | 30 | 22.7 | 79.2 | NNE | 7.8 | 8.2 | Ci.-S. | Cu.-N. | 1.1 | d a. p. d° p. |
| 4 | 58.71 | 26.2 | 30.1 | 23 | 78.8 | NNE, ENE | 8.1 | 4 | A.-Cu. | Cu.-N. ENE | ------ | |
| 5 | 58.58 | 26 | 30.4 | 22 | 79.2 | NE | 7.4 | 5.8 | Ci.-S. | Cu.-N. | 4.8 | Ω a. d° ● p. |
| 6 | 57.27 | 25.7 | 30.5 | 22.7 | 79.2 | NNW | ------ | 5.5 | Ci. | Cu.-N. ENE | .3 | d$^2$ ψ p. |
| 7 | 57.22 | 25.5 | 30.1 | 20.7 | 74.5 | SE quad. | ------ | 8.5 | Ci.-S. | Cu. | ------ | ψ° p. |
| 8 | 58.03 | 25.7 | 31 | 21.5 | 79.8 | Variable | 5.8 | 1 | Ci. | Cu. | ------ | Ω° ≡° a. |
| 9 | 57.85 | 27.4 | 32.6 | 23.1 | 78 | SSE, S | 4.6 | 4.5 | Ci. | Cu.-N. SE | 37.1 | |
| 10 | 57.52 | 26.7 | 31.9 | 23.1 | 81.3 | Variable | 6 | 2.5 | Ci. | Cu. | ------ | ●$^2$ a. ζ° p. |
| 11 | 57.77 | 27.3 | 30.9 | 23.7 | 80.2 | ENE | 9.2 | 4.5 | Ci. | Cu. | ------ | Ω a. ζ° p. |
| 12 | 58.95 | 27 | 29.8 | 23.7 | 78.3 | NE quad. | 10.8 | 1.3 | Ci. | Cu. ENE | ------ | |
| 13 | 59.52 | 26.2 | 29.6 | 23.2 | 79.7 | ENE | 11.2 | 5.8 | Ci. | Cu.-N. | 10.9 | ●° a. d p. |
| 14 | 59.22 | 26.4 | 31 | 23.2 | 78.5 | NE quad. | 10.4 | 2 | Ci. | Cu.-N. | ------ | d° ζ° p, |
| 15 | 59.29 | 26.8 | 30.1 | 24.5 | 80.5 | NE quad. | 10 | 5.2 | Ci., Ci.-S. | Cu.-N. ENE | 1.3 | d° a. d$^2$ p. |
| 16 | 60.16 | 26.8 | 30 | 24.1 | 81 | NE quad. | 11.2 | 9 | A.-Cu. | Cu.-N. ENE | .8 | d a. d° p. |
| 17 | 60.70 | 27.2 | 29.9 | 24.4 | 77.7 | NE quad. | 19.3 | 4.7 | Ci.-S. | Cu., S.-Cu. | ------ | d a. |
| 18 | 61.56 | 26.3 | 30 | 24.1 | 81.8 | NE quad. | 14 | 3.7 | Ci., A.-Cu. | Cu.-N. ENE | ------ | d° p. |
| 19 | 60.91 | 26.3 | 29.3 | 22.9 | 73.5 | NE quad. | 10.4 | 1.7 | Ci. | Cu. | 1 | |
| 20 | 61.29 | 26.1 | 29.6 | 21.7 | 76.8 | ENE | 9.2 | 2.7 | Ci. | Cu. | ------ | d a. ∞ p. |
| 21 | 61.93 | 27 | 30.1 | 24.2 | 71 | NE quad. | 12.2 | .8 | Ci. | Cu. ENE | ------ | |
| 22 | 61.59 | 26.6 | 29.8 | 23.5 | 73 | NE quad. | 11.9 | 4.2 | Ci. | Cu. ENE | ------ | d p. |
| 23 | 61.34 | 27 | 30.4 | 24 | 72 | NE quad. | 14.3 | 1.7 | Ci. | Variable | ------ | |
| 24 | 61.65 | 26.3 | 30.5 | 23.7 | 68.5 | NE quad. | 14.3 | 3 | A.-Cu., Ci. | Cu.-N. ENE | ------ | |
| 25 | 60.36 | 25.9 | 30.7 | 23 | 77 | NE quad. | 11.7 | 3.7 | A.-Cu. | Cu.-N. ENE | .5 | d$^2$ ● p. |
| 26 | 59.89 | 26.6 | 30 | 24 | 73.7 | NE quad. | 10.4 | 5 | Ci.-S. | Cu.-N. ENE | ------ | d° p. |
| 27 | 59.70 | 26.2 | 30 | 24 | 75.7 | NE quad. | 14.8 | 3.7 | Ci. | Cu.-N. | .5 | d ● a. |
| 28 | 59.74 | 26.2 | 30 | 23.1 | 76.2 | NE quad. | 12.1 | 2.3 | Ci. | Cu. ENE | ------ | d° p. |
| 29 | 59.42 | 25.4 | 28.2 | 23.2 | 77.5 | NE | 9.7 | 6.7 | Ci., A.-Cu. | Cu.-N. ENE | 2.1 | d a. p. ●° p. |
| 30 | 59.11 | 26.1 | 30.1 | 23.3 | 79.2 | NE quad. | 13.2 | 3.8 | Ci. | Cu. | 4.1 | d° ● p. |
| 31 | 59.28 | 26.2 | 29.5 | 23.9 | 78.2 | NE quad. | 10.9 | 4.8 | A.-Cu., Ci. | Cu. | ------ | |
| Mean | 759.56 | 26.4 | 30.3 | 23.2 | 77.1 | ------------ | 10.8 | 4 | ------------ | ------------ | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------------ | ------ | ------ | ------------ | ------------ | 66.8 | |

[a] All the mean values given in these tables are deduced from six daily observations.

[b] Deduced from 5 observations only.

## METEOROLOGICAL DATA, ETC.—Continued.

### ILOILO.

[$\phi$=10° 42′ N; $\lambda$=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.84 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  |  | Clouds. |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Lower. |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *P. ct.* |  | *Km. p. h* | *0–10.* |  |  | *mm.* |  |
| 1 | 759.59 | 26 | 30.1 | 23 | 79 | NE | 12.7 | 4.5 | Ci. | Cu. NE | ------ |  |
| 2 | 59.08 | 26.5 | 32 | 22.9 | 76.8 | NE | 11 | 3 | Ci. | Cu. NE | ------ | Ω² ≡° a. |
| 3 | 59.30 | 25.8 | 30.5 | 23.7 | 82.7 | NE | 11.4 | 5.8 | Ci. | Cu. NE | 0.5 | Ω² a. d a. p. ● ⊍ p. |
| 4 | 58.80 | 26.4 | 31.1 | 23.7 | 79.5 | NE | 10.8 | 6.7 | Ci. | Cu. | ------ | ⊍ p. |
| 5 | 58.74 | 26.4 | 30.7 | 23.1 | 78.7 | NE | 12.3 | 5.3 | Ci. | Cu. | ------ | Ω² a. ⊕ p. |
| 6 | 57.86 | 25.2 | 30.3 | 22.9 | 86 | NE | 10.1 | 9.2 | Ci.-S. | Cu. | 12.7 | Ω a. d a. p. ● p. |
| 7 | 57.50 | 25.6 | 30.6 | 22.7 | 79.2 | NE | 6.2 | 9.2 | Ci.-S. | Cu. N | ------ |  |
| 8 | 58.01 | 25.7 | 29.5 | 21.8 | 83.3 | SW | 9 | 5 | Ci. | Cu. | ------ | ≡° a. |
| 9 | 57.99 | 25.6 | 29.2 | 21.3 | 81.5 | SW | 7.3 | 5.3 | Ci. | Cu. | ------ | Ω² a. |
| 10 | 57.57 | 25.9 | 30.8 | 21.9 | 82.2 | SW | 5.5 | 4.7 | Ci. | Cu. | ------ | Ω² a. ↯ p. |
| 11 | 57.55 | 27.3 | 32.2 | 23.6 | 77.2 | ENE | 6.8 | 7.2 | Ci., A.-Cu. | Cu. NE | 24.9 | Ω a. ● ↯ p. |
| 12 | 58.77 | 27.1 | 31.8 | 24.2 | 75.8 | NE | 11 | 3.5 | Ci. | Cu. | ------ |  |
| 13 | 59.56 | 26 | 30.3 | 23.4 | 78.3 | NE | 14 | 6.7 | Ci. | Cu. | 2 | d a. ● p. |
| 14 | 59.47 | 26.1 | 31.4 | 22.9 | 77.8 | NE | 13.9 | 8.3 | Ci., Ci.-S. | Cu. NE | 2.3 | d ● p. |
| 15 | 59.45 | 26.1 | 31 | 23.3 | 80.2 | NE | 14.8 | 7.5 | Ci. | Cu. NE | ------ | ●° p. |
| 16 | 60.11 | 26.5 | 30.3 | 24.1 | 77.8 | NE | 12.7 | 6.7 | Ci., Ci.-S. | Cu. | ------ | d ↯ p, |
| 17 | 60.47 | 26.6 | 31.2 | 23.4 | 75.7 | NE | 14.2 | 3.8 | Ci. | Cu. NE | ------ |  |
| 18 | 61.31 | 26.9 | 31 | 24.2 | 71.3 | NE | 16 | 3.5 | Ci. | Cu. NE | ------ | d a. |
| 19 | 60.75 | 26.6 | 31.1 | 23.5 | 73.2 | NE | 14.2 | 3.5 | Ci. | Cu. | ------ | Ω a. ∞ p. |
| 20 | 61.30 | 26.2 | 31 | 24 | 77.3 | NE | 11.6 | 4.5 | Ci., Ci.-S. | Cu. NE | ------ | d° a. ∞ p. |
| 21 | 61.92 | 26.6 | 31.3 | 23.1 | 70.5 | NE | 15.6 | 2.7 | Ci. | Cu. NE | ------ | Ω a. ∞ p. |
| 22 | 61.38 | 26.3 | 31 | 22.5 | 70.8 | NE | 15.8 | 3.3 | Ci. | Cu. NE | ------ | Ω a. |
| 23 | 61.35 | 26 | 30.4 | 22.8 | 75.2 | NE | 16.4 | 3.8 | Ci. | Cu. NE | ------ | d a. |
| 24 | 61.46 | 26.2 | 30.8 | 22.4 | 66.8 | NE | 16.9 | 2.5 | Ci. | Cu. | ------ |  |
| 25 | 60.62 | 25.8 | 30.3 | 22 | 71.5 | NE | 15.5 | 5 | Ci. | Cu. | ------ | Ω° a. |
| 26 | 59.89 | 26.2 | 30.7 | 23.2 | 70.8 | NE | 16.4 | 5.7 | Ci.-S. | Cu. | ------ | d° p. |
| 27 | 59.74 | 26.1 | 30.2 | 23.8 | 69.5 | NE | 17.3 | 5 | Ci., A.-Cu. | Cu. NE | 3.6 |  |
| 28 | 59.64 | 25.8 | 30.4 | 22.6 | 73.2 | NE | 16.2 | 5.5 | Ci., Ci.-S. | Cu. NE | ------ | ● a. |
| 29 | 59.56 | 24.8 | 30.6 | 22.2 | 80.5 | NE | 14 | 7.2 | Ci. | Cu. NE | .3 | Ω a. d ●° p. |
| 30 | 59.10 | 26.1 | 30.7 | 22.8 | 73.7 | NE | 14.5 | 6.5 | Ci. | Cu. NE | .3 | ●° p. |
| 31 | 59.20 | 25.9 | 30 | 23.9 | 77.3 | NE | 15 | 7.7 | Ci.-S. | Cu. | 2.3 | ● a. |
| Mean | 759.58 | 26.1 | 30.7 | 23.1 | 76.6 | ------ | 12.9 | 5.4 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 48.9 |  |

### ORMOC.

[$\phi$=11° 00′ N; $\lambda$=124° 36′ E; barometer above sea, 5.6 meters; gravity correction not applied, —1.83 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Amount (mean). | Clouds. Upper. | Lower. | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *P. ct.* |  | *Km. p. h* | *0-10.* |  |  | *mm.* |  |
| 1 | 759.81 | 25.8 | 31.3 | 20.5 | 77 | NE, N | 6.8 | 2.8 | Ci. | Cu. E | ------ |  |
| 2 | 59.20 | 25.2 | 31.9 | 20.7 | 85 | N, S | 5.7 | 3.7 | Ci., Ci-S. | Cu. E | 0.5 | ≡° a. ⌒ ⊤ d° p. |
| 3 | 59.29 | 24.8 | 27.8 | 22.2 | 88 | N | 3.2 | 9.3 | Ci.-S. | Cu.-N. E, NE | 2.1 | ≡° a. d a. p. |
| 4 | 58.90 | 26 | 30.5 | 22.8 | 82.8 | NE | 5.3 | 7 | A.-Cu. | Cu. E | 3.6 | ● a. |
| 5 | 58.85 | 25.1 | 29 | 21 | 86 | Variable | 3.6 | 8.2 | Cu. ESE | Cu.-N. NE, NNE | .8 | ≡° a. ⊤ d ⊍ p. |
| 6 | 57.42 | 25.6 | 29.8 | 22.3 | 82 | N quad. | 4.6 | 8.8 | Ci.-S. | Cu., Cu.-N. NE | ------ |  |
| 7 | 57.33 | 24.4 | 27.4 | 21.1 | 85 | N, NW | 3.9 | 10 | Ci.-S. | Cu.-N. NW, WNW | ------ |  |
| 8 | 58.25 | 25.3 | 30.5 | 21.4 | 84.6 | N, S | 5.1 | 5.3 | Ci. E | Cu.-N. SSW | ------ | ≡ a. ⊕° p. |
| 9 | 58.24 | 25.4 | 30.1 | 20.7 | 85.2 | Variable | 6 | 5.5 | A.-Cu. S | Cu. | ------ | ≡° a. |
| 10 | 57.71 | 25.6 | 31.4 | 21.4 | 83.3 | N, S | 5.2 | 3.7 | Ci. | Cu. | ------ | ≡° a. |
| 11 | 58.06 | 25.5 | 30 | 21.7 | 86.7 | Variable | 4.9 | 6.3 | Ci. E | Cu.-N. | 3.1 | ≡° a. ● ⊤ p. |
| 12 | 59.22 | 26.6 | 30.8 | 20.9 | 73.7 | N, NE | 6.4 | 3.3 | Ci., A.-Cu. | Cu., Cu.-N. E | ------ | Ω ≡° a. |
| 13 | 59.69 | 26.1 | 29.1 | 23.1 | 76 | NE quad. | 7.3 | 7.3 | Ci. E | Cu.-N. ENE, NE | .6 | Ω a. d° p. |
| 14 | 59.49 | 25.3 | 30.3 | 21.1 | 87.2 | N, NW | 5.4 | 8.3 | A.-Cu. | Cu.-N. E | 25.1 | Ω a. ⊤ ●² ↯ p. |
| 15 | 59.65 | 27 | 30.7 | 23.6 | 75.2 | NE | 8.4 | 6.5 | Ci.-S., A.-Cu. | Cu.-N. E, NE | 1 | ≡° a. d° ⌒ p. |
| 16 | 60.33 | 27.8 | 32 | 23.5 | 69 | Variable | 7.1 | 6 | A.-Cu. | Cu., Cu.-N. E | .3 | p° a. |
| 17 | 60.96 | 27.3 | 31 | 24.2 | 69.8 | NE quad. | 8.6 | 7 | Ci.-S. | Cu., Cu.-N. E | 1 | p a. |
| 18 | 61.64 | 27 | 31.2 | 22.7 | 70.8 | NE | 9.9 | 4.5 | Ci. | Cu. E, NE | ------ |  |
| 19 | 61.13 | 25.4 | 30.6 | 19.5 | 75.7 | NE, SE | 6.6 | 3.7 | Ci. | Cu. E, ENE | ------ |  |
| 20 | 61.54 | 25.3 | 30.4 | 21.5 | 76.7 | Variable | 5.3 | 4.7 | Ci. | Cu., Cu.-N. E | ------ |  |
| 21 | 62.26 | 26.7 | 31.2 | 22.2 | 68.7 | NE | 8.8 | 4.3 | Ci. | Cu. E | ------ | ⌒° p. |
| 22 | 61.91 | 26 | 30.8 | 21.7 | 73.3 | N quad. | 6.8 | 5.2 | A.-Cu., Ci. | Cu., Cu.-N. E | .3 | p° p. |
| 23 | 61.75 | 26.5 | 31.2 | 22.7 | 68.2 | NE quad. | 9.1 | 4.8 | Ci. | Cu., Cu.-N. E | ------ | ⌒° p. |
| 24 | 61.98 | 26.3 | 30.8 | 21.9 | 65.3 | NE | 12 | 3.2 | A.-Cu. | Cu., Cu.-N. ENE | ------ |  |
| 25 | 60.59 | 26.2 | 30.3 | 21.9 | 68.3 | NE quad. | 8.7 | 5.2 | A.-Cu. | Cu., Cu.-N. E | ------ | ⌒° p. |
| 26 | 60.01 | 27.5 | 31.3 | 22 | 62 | E quad. | 8.5 | 5.5 | A.-Cu. S | Cu.-N. E, ENE | ------ |  |
| 27 | 60.18 | 26.3 | 31.1 | 23.3 | 70.3 | NE quad. | 9.7 | 6.3 | Ci., Ci.-S. | Cu.-N. E | .8 |  |
| 28 | 60.09 | 26.1 | 31.5 | 22.1 | 70.3 | NE | 9.1 | 5.5 | A.-Cu. | Cu.-N. ENE, E | ------ | d° a. ⊍° p. |
| 29 | 59.80 | 24.3 | 28.2 | 21.5 | 84.5 | N quad. | 5.4 | 9.2 | Ci.-S. | Cu.-N. ENE | 2.9 | d p. |
| 30 | 59.41 | 26.5 | 31 | 22.4 | 73.3 | NE quad. | 7.8 | 7 | Ci.-Cu. WNW | Cu.-N. E | ------ | ⌒° p p. |
| 31 | 59.39 | 26.7 | 30.9 | 22.9 | 71.7 | N quad. | 9.2 | 6 | Ci.-S. | Cu. NE | ------ | ⌒° p. |
| Mean | 759.81 | 26 | 30.5 | 22 | 76.6 | ------ | 6.9 | 5.9 | ------ | ------ | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | 42.1 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### TACLOBAN.

[$\phi$=11° 15′ N; $\lambda$=125° 00′ E; barometer above sea, 3.4 meters; gravity correction not applied, —1.82 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimmm. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | P. ct. | | 0–12. | 0–10. | | | | | mm. | |
| 1 | 760.07 | 26.1 | 32.2 | 22.2 | 84.3 | ENE, NNW | 0.7 | 3.2 | Ci., Ci.-S. | | Cu. | ENE | 5.8 | Ω² a. p. ● p. |
| 2 | 59.30 | 26.1 | 32.4 | 23.2 | 86.7 | NW quad. | .5 | 3.8 | Ci.-Cu. | WSW | Cu. | ENE | 7.9 | Ω² a. ● Ψ² p. |
| 3 | 59.56 | 24.8 | 26.7 | 23.8 | 92.7 | N quad. | 1 | 10 | ------ | | N. | NE | 23.6 | ● a. p. |
| 4 | 59.11 | 26.3 | 30.4 | 24 | 86.8 | NW | .8 | 6.5 | ------ | | Cu.-N. | NE | 6.6 | ● a. |
| 5 | 59.06 | 25.3 | 28.9 | 23.8 | 89.7 | NW quad. | 1 | 7.5 | Ci., Ci.-S. | SW | Cu.-N. | ENE | 6.4 | ● a. p. |
| 6 | 57.48 | 26.5 | 30.3 | 24 | 79.2 | N, NNW | 1.7 | 7.8 | Ci. | SW | Cu., Cu.-N. | ENE, NE | ------ | ●a. ◯²a. p. Ψ²Φ²p. |
| 7 | 56.63 | 25.9 | 28.2 | 22.8 | 80 | WNW | 2 | 9 | Ci. | SW | Cu.-N. | NW | ------ | |
| 8 | 58.09 | 26 | 30.6 | 21.6 | 81.8 | SSE | 1 | 5.3 | Ci. | SW | Cu. | S | 1 | Ψ² Φ² Ω a. |
| 9 | 58.28 | 26.4 | 30.8 | 23.5 | 85.5 | SSE, SE | .8 | 6.7 | Ci.-S. | | Cu.-N. | SE | ------ | ● a. ⌒ Ψ² p. |
| 10 | 57.78 | 26.6 | 31.4 | 22.7 | 85.2 | SE | .2 | 4 | Ci. | WSW | Cu. | SE | .5 | |
| 11 | 58.27 | 26.5 | 31.3 | 23.9 | 86.2 | SE | .7 | 8.7 | Ci. | | Cu.-N. | SE | 5.6 | ● d a. p. ⊤ p. |
| 12 | 59.60 | 26.8 | 31.8 | 23.3 | 80.3 | WNW, E | .8 | 3.7 | Ci.-S. | W | Cu. | SE, ESE | 2 | Φ² ≡ d a. |
| 13 | 60.03 | 25.4 | 29 | 23 | 85.2 | ENE, E | .7 | 8.3 | Ci.-S. | W | Cu.-N. | ENE | 4.3 | ● d a. p. |
| 14 | 59.79 | 25.7 | 30.1 | 23.1 | 87.2 | NW quad. | .8 | 6.7 | Ci.-S. | W | Cu. | ENE, NE | 15.1 | ● p. |
| 15 | 60.11 | 26 | 30.9 | 23.2 | 85.5 | E quad. | 1.2 | 6.5 | Ci.-S. | | Cu.-N. | ENE | .8 | ●° a. d° p. |
| 16 | 60.74 | 27.3 | 32 | 23.5 | 78.3 | ESE | .5 | 4.3 | Ci.-Cu. | SW | Cu. | ENE, E | .5 | Ω² a. ●° p. |
| 17 | 61.38 | 27.1 | 32 | 23.6 | 77.5 | ESE | 1.2 | 7.3 | Ci. | | Cu.-N., Cu. | E, ENE | 1.5 | ● p. |
| 18 | 62.24 | 26.2 | 32.8 | 22.8 | 79.5 | NE quad. | .3 | 5 | Ci. | | Cu. | ENE | 2 | Ω² a. ● ↙° p. |
| 19 | 61.42 | 26.1 | 30.8 | 21 | 81 | E quad. | .5 | 4.8 | Ci. | | Cu. | ENE | 1.8 | Ω² ●° a. |
| 20 | 61.77 | 27 | 32.4 | 23 | 74.3 | E quad. | .8 | 3.3 | Ci.-S. | SW | Fr.-Cu. | ENE | ------ | ● a. |
| 21 | 62.76 | 26.8 | 32.8 | 23 | 75.8 | E | 1 | 2.7 | Ci. | SW | Fr.-Cu. | ENE | .5 | Ω² a. |
| 22 | 62.33 | 26.6 | 32.4 | 23 | 79 | E | .3 | 6.7 | Ci., Ci.-S. | | Cu. | ENE, E | 10.9 | ●° a. ● p. |
| 23 | 62.23 | 26.2 | 31 | 23.4 | 78 | E | 1.2 | 8.3 | Ci. | | Cu.-N. | NE | 3.8 | ● d a. |
| 24 | 62.31 | 25.2 | 31.3 | 22.4 | 80 | NE quad. | 1.3 | 4.5 | ------ | | Cu., N. | ENE | .5 | ● a. p. Ω² p. |
| 25 | 61.03 | 26.1 | 30.5 | 23 | 77.5 | NE quad. | 1.2 | 4.3 | Ci.-S. | | Cu. | ENE | ------ | Ω² a. d° p. |
| 26 | 60.66 | 26.1 | 31.3 | 23.2 | 76.8 | ENE | 1 | 7.3 | Ci.-S. | W | Cu.-N. | ENE | ------ | d° p. |
| 27 | 60.48 | 26.4 | 31 | 23.3 | 75.3 | NE quad. | 1.3 | 6.5 | Ci.-S. | | Cu.-N., Cu. | ENE | 5.3 | ● p. |
| 28 | 60.30 | 26.5 | 32.3 | 22.8 | 75.5 | NE quad. | .7 | 5 | Ci.-S. | SW | Cu. | ENE | .5 | ● a. |
| 29 | 60.18 | 24 | 26.3 | 22.8 | 91.2 | NW quad. | 1.3 | 9.7 | ------ | | N. | ENE, E | 22.2 | d a. ● a. p. |
| 30 | 59.85 | 25.2 | 30 | 22.8 | 88.2 | NW | 1.5 | 8 | Ci. | SW | N. | ENE | 3.8 | ● d p. |
| 31 | 59.54 | 25.8 | 30.3 | 23.2 | 81.8 | E | 1 | 6.3 | Ci. | | Cu.-N. | ENE | 7.9 | ● a. Φ² p. |
| Mean | 760.08 | 26.1 | 30.8 | 23.1 | 82.1 | ------ | .9 | 6.2 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 140.8 | |

### CAPIZ.

[$\phi$=11° 35′ N; $\lambda$=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.81 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | Km. p. h | 0–10. | | | | | mm. | |
| 1 | 760.38 | 25.9 | 30.8 | 23.4 | 87.7 | NNE | 7.6 | 5.3 | Ci. | | Cu. | NE | 0.3 | ●° ⌒ a. |
| 2 | 60.21 | 26 | 31 | 23.6 | 88 | NE | 6.2 | 5.7 | A.-Cu. | E | Cu. | NE | 2 | ●° p. |
| 3 | 60.08 | 26.4 | 31.5 | 24 | 85 | NE | 6.9 | 6.3 | Ci.-S. | | Cu., N. | NE | 1 | ●° p. |
| 4 | 59.55 | 26.3 | 30.5 | 24.5 | 86.3 | NE | 5.2 | 8 | Ci., Ci.-S. | | Cu., Fr.-N. | NE | ------ | d° p. |
| 5 | 59.24 | 26.4 | 30.7 | 24 | 86.8 | NNE, NE | 5.2 | 6.5 | Ci. | | Cu. | NE | ------ | Φ° Ψ° p. |
| 6 | 58.27 | 25.8 | 30.7 | 24 | 86.3 | N quad. | 7.5 | 8.3 | Ci.-S. | | Cu., N. | N quad. | ------ | d° Ψ° p. |
| 7 | 57.57 | 26 | 29.8 | 23.1 | 84 | NW quad. | 8.3 | 9 | Ci.-S. | | Fr., N. | NW quad. | .3 | ●° p. |
| 8 | 57.90 | 25.6 | 32 | 21.6 | 82.7 | E quad. | 4.5 | 6.8 | Ci. | | Cu. | S | ------ | |
| 9 | 58.10 | 26.3 | 32.3 | 21.9 | 84.7 | SE quad. | 3.5 | 2.3 | Ci. | | Cu. | SSE | ------ | Ω° a. |
| 10 | 57.76 | 26.2 | 32.2 | 22.1 | 84.3 | Variable | 3 | 5 | Ci. | | Cu. | SE | ------ | Ω a. ⋖ p. |
| 11 | 57.83 | 26.1 | 31.8 | 22.5 | 88.5 | NE | 3.7 | 4.8 | Ci. | | Cu. | SE, NE | 5.6 | Ω a. |
| 12 | 59.17 | 26.9 | 31.9 | 24.7 | 84.8 | NE | 8 | 5.2 | Ci.-S. | | N., Cu. | E | .5 | ⌒ ● a. |
| 13 | 60.15 | 26.5 | 30.8 | 23.4 | 78.8 | NE, ENE | 11.2 | 7.5 | Ci.-S. | NE | N. | NE | ------ | ●° a. |
| 14 | 60.20 | 26.1 | 30.4 | 23.6 | 81.5 | NNE | 9.8 | 6.2 | Ci. | NNE | Cu. | NNE | 10.6 | d° ●° p. |
| 15 | 60.40 | 26.2 | 30.6 | 23.9 | 87.5 | NNE, NE | 11.4 | 8.8 | Ci.-S. | NNE | Cu. | NNE | 3.6 | ● ⊕° ◯° a. d° p. |
| 16 | 60.99 | 26.2 | 30.3 | 24.1 | 88.8 | NE | 6.1 | 7.5 | Ci.-S. | | N. | NE | 1.3 | ●° a. d° ⋖ ●° p. |
| 17 | 61.47 | 26.6 | 31.2 | 24.2 | 86.2 | NE | 9.7 | 6.8 | Ci. | | Cu. | NE | .8 | ●° p. |
| 18 | 62.32 | 26.5 | 31.5 | 24.1 | 82.3 | NE | 10.7 | 3.5 | Ci. | | Cu. | NE | ------ | |
| 19 | 61.36 | 26.6 | 31.5 | 24 | 83.8 | NE | 7.4 | 5 | Ci., Ci.-S. | | Cu. | NE | 1 | d° p. |
| 20 | 61.69 | 26.3 | 31.9 | 24.2 | 84.8 | NE | 8.1 | 4 | Ci., Ci.-S. | | Cu., N. | NE | ------ | ●° a. |
| 21 | 62.86 | 26.4 | 31.2 | 23.8 | 83 | NE | 8.5 | 3.5 | Ci. | | Cu. | NE | ------ | |
| 22 | 62.36 | 26 | 31.4 | 23 | 83.3 | NE | 9.8 | 5.5 | Ci.-S. | | Fr., N. | NE | 5.1 | ●° a. |
| 23 | 62.41 | 26 | 31.2 | 23.4 | 81.8 | NE | 12.7 | 6.2 | Ci., Ci.-S. | | Variable | NE | ------ | ●° a. |
| 24 | 62.77 | 26.4 | 31.4 | 23.2 | 75.8 | NE | 10.6 | 6.5 | Ci.-S. | | N., Cu. | NE | 1.8 | d° a. ●° a. p. |
| 25 | 61.45 | 25.8 | 31 | 23.3 | 82.3 | NNE, NE | 9.1 | 6 | Ci. | | N. | NE | ------ | ●° a. |
| 26 | 60.88 | 26.2 | 30.7 | 23.9 | 77.3 | NE | ------ | 7.5 | Ci. | | N. | NE | ------ | Φ° p. |
| 27 | 60.81 | 26.6 | 32.4 | 25 | 75.3 | NE | 12.3 | 5.5 | Ci.-S. | | Cu., N. | NE | 1 | |
| 28 | 60.70 | 26.1 | 30.5 | 23 | 81.5 | NE | 8.1 | 7.8 | Ci. | | N.-cf., Fr.-N. | NE | ------ | ●° a. d° Φ° p. |
| 29 | 60.54 | 25.2 | 30.2 | 22.5 | 87 | NE | 6.4 | 7.7 | Ci.-S. | | Cu., N. | NE | 2.3 | ● Φ° d° p. |
| 30 | 60.10 | 26 | 30.8 | 23.3 | 83.7 | NE | 7.7 | 5.8 | Ci. | | Cu. | NE | ------ | |
| 31 | 60.20 | 26.2 | 30.8 | 24.2 | 81.7 | NE | 8.4 | 7 | Ci.-S. | | N. | NE | ------ | |
| Mean | 760.31 | 26.2 | 31.1 | 23.5 | 83.7 | ------ | 7.9 | 6.2 | ------ | | ------ | | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ | | ------ | | 37.2 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### CALBAYOG.

[φ=12° 04′ N; λ=124° 36′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.80 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. | | | | | |
| | | | | | | | | | Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | P. ct. | | Km. p.h | 0-10. | | | | | mm. | |
| 1 | 760.06 | 25.6 | 32 | 21.7 | 86 | NE | 6.4 | 3.5 | Ci.-S. | | S.-Cu. | ENE | 1 | Ω a. d° Φ° p. |
| 2 | 59.40 | 26.1 | 32.5 | 22.8 | 85.5 | Variable | 5.8 | 4.2 | Ci.-S., A.-Cu. | | S.-Cu. | NE | | Φ p. |
| 3 | 59.62 | 23.8 | 25.9 | 22.5 | 94.2 | NNE | 3.9 | 8 | A.-Cu. | | S.-Cu. | ENE | 15 | ● a. ●° ψ p. |
| 4 | 59.14 | 25.5 | 30.6 | 21.8 | 88.3 | Variable | 5.7 | 4.3 | A.-Cu. | E | S.-Cu. | NE | 4.6 | p° a. Φ° p. |
| 5 | 59.06 | 25.6 | 31.1 | 21.8 | 84.5 | N | 6.1 | 6.8 | Ci.-S. | | S.-Cu. | NNE | | Ω a. ψ p. |
| 6 | 57.66 | 25.6 | 31.1 | 22.7 | 84.7 | NE | 6.1 | 7.7 | Ci.-S. | | S.-Cu. | NE | | ◯° a. ψ a. p. |
| 7 | 56.51 | 24.6 | 26.6 | 22.6 | 87.2 | W | 7.6 | 10 | Ci.-S. | | S.-Cu. | W quad. | | d° ψ p. |
| 8 | 57.96 | 26.3 | 29.6 | 22.5 | 82 | S quad. | 8.3 | 3 | Ci. | | S.-Cu. | | | ψ a. |
| 9 | 58.11 | 25.8 | 31.1 | 21.5 | 86.5 | Variable | 6.2 | 3.7 | A.-Cu. | SSE | S.-Cu. | S. | 1.8 | Ω a. ●° p. |
| 10 | 57.56 | 26.4 | 29.7 | 22.5 | 83.8 | Variable | 4.8 | 3.2 | Ci.-S. | | S.-Cu. | | | Ω a. |
| 11 | 58 | 26.2 | 31.2 | 23.1 | 86.5 | Variable | 4.9 | 6.2 | Ci.-S. | SE | S.-Cu. | EbyS | 2.5 | Ω a. T ⌐Ƶ ●° < p. |
| 12 | 59.61 | 26.1 | 31.7 | 21.8 | 83.3 | NE quad. | 6.7 | .8 | | | S.-cf., Cu. | E | | Ω a. |
| 13 | 60.05 | 25.5 | 31.2 | 22.1 | 82.5 | NE quad. | 8.8 | 4 | Ci.-S. | | S.-Cu. | E | | Ω a. |
| 14 | 60.01 | 25.1 | 30 | 21.3 | 87.5 | N | 7.3 | 6.8 | Ci.-S. | | S.-Cu. | NE quad. | 8.4 | Ω a. d° ●° p. |
| 15 | 60.20 | 25.9 | 31,7 | 23 | 84.8 | NE | 9.8 | 6 | Ci.-S. | SE | S.-Cu. | ENE | .5 | d° p. |
| 16 | 60.79 | 26.2 | 32.9 | 23.3 | 83.5 | NE quad. | 7.2 | 5.2 | Ci.-S. | | S.-Cu. | E | | ⌒° a. |
| 17 | 61.45 | 25.9 | 32.3 | 22.7 | 84 | NE quad. | 7.2 | 4 | Ci. | | S.-cf. | E | | |
| 18 | 62.22 | 26 | 32.5 | 22.4 | 80.7 | NE quad. | 8.9 | 1.5 | Ci. | | S.-cf., Cu. | E | | |
| 19 | 61.46 | 25.1 | 31.2 | 20.9 | 87 | NE quad. | 6.2 | 4.8 | Ci.-S. | | S.-cf. | E | 14.2 | Ω a. ● d° p. |
| 20 | 61.88 | 26.2 | 32.4 | 22.6 | 79.3 | E quad. | 6.7 | 4.7 | Ci.-S. | | S.-Cu. | E | | |
| 21 | 62.76 | 26 | 31.9 | 22.2 | 80.2 | NE quad. | 8.1 | 2.3 | A.-Cu. | E | S.-cf., Cu. | ENE | | |
| 22 | 62.44 | 26.1 | 32.2 | 21.6 | 78.5 | E quad. | 7.2 | 4 | A.-S., Ci.-S. | | Cu. | E | 2.3 | |
| 23 | 62.34 | 25.7 | 31.4 | 21.2 | 79.5 | NE | 8.9 | 3.5 | Ci.-S. | | S.-cf., Cu. | NE | .5 | d° a. |
| 24 | 62.50 | 25.5 | 31.7 | 21 | 78 | NE | 8.9 | 5.8 | Ci.-S. | | S.-Cu. | NE | | d° a. |
| 25 | 61.14 | 25.5 | 31.7 | 21.5 | 77.7 | N, NE | 9.9 | .8 | | | S.-cf., Cu. | NE | | |
| 26 | 60.73 | 25.5 | 31.9 | 21.6 | 77 | N quad. | 11.4 | 2.3 | Ci. | | S.-cf. | NE | | |
| 27 | 60.66 | 25.8 | 32.1 | 22.6 | 75.3 | N | 10.9 | 2.8 | Ci.-S. | | S.-cf., Cu. | ENE | 1 | |
| 28 | 60.47 | 25.6 | 32.4 | 21 | 77.7 | NNE | 7.6 | 4.8 | Ci. | | S.-Cu. | ENE | | d° a. Φ p. |
| 29 | 60.17 | 24.6 | 30.2 | 21.8 | 84.8 | NE quad. | 6.4 | 7 | A.-Cu. | | S.-Cu. | ENE | 2 | p° Φ° p. |
| 30 | 59.79 | 26 | 32.7 | 21.6 | 77.7 | NE quad. | 8.5 | 4.3 | Ci.-S. | | Cu. | ENE | | |
| 31 | 59.84 | 25.5 | 31.4 | 22.1 | 81.2 | NE | 8.3 | 5.3 | Ci.-S. | | S.-Cu. | ENE | | d° Φ p. |
| **Mean** | 760.12 | 25.7 | 31.2 | 22.1 | 82.9 | | 7.4 | 4.6 | | | | | | |
| **Total** | | | | | | | | | | | | | 53.8 | |

### LEGASPI.

[φ=13° 09′ N; λ=123° 45′ E; barometer above sea, 5.5 meters; gravity correction not applied, —1.77 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Maximum. | Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Force (mean). | Clouds. Amount (mean). | Upper. | | Lower. | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | Km. p.h | 0-10. | | | | | mm. | |
| 1 | 760.65 | 26.1 | 30.7 | 22.6 | 82.5 | NE | 13.2 | 4.2 | | | Cu.-N. | ENE, NE | 6.3 | ● a. p. |
| 2 | 59.86 | 26.7 | 30 | 23.9 | 84.7 | NE | 12.2 | 5.7 | Ci.-S. | | Fr.-N. | NE | 3.6 | ● a. p. |
| 3 | 59.96 | 26.7 | 29.7 | 24.5 | 82.2 | NE quad. | 12.3 | 5.7 | A.-Cu. | SE | Cu, Cu.-N. | NE, ENE | | d° p. |
| 4 | 59.57 | 27.7 | 33 | 24.1 | 79.2 | NE quad. | 9.9 | 2.2 | Ci. | | Cu. | E quad. | | <° p. |
| 5 | 59.50 | 26.8 | 32 | 22 | 79.8 | NE | 12.5 | 3.7 | Ci. | | Cu. | ENE | | ⌒° a. |
| 6 | 58.06 | 26.7 | 31 | 24.2 | 80.3 | NNE | 13.1 | 6.5 | Ci.-S. | | Cu. | NE, ENE | | ψ p. |
| 7 | 56.30 | 25.4 | 28.3 | 22.5 | 82 | W quad. | 13.2 | 9.8 | Ci.-S. | | Fr.-N. | N, NNW | 1.9 | ● d p. |
| 8 | 57.50 | 25.8 | 31.1 | 21.9 | 80.8 | SW quad. | 9.5 | 5.8 | A.-Cu. | NW | Cu. | WSW | | |
| 9 | 57.88 | 25.6 | 32 | 20.3 | 84.8 | SSW, SW | 6 | 2 | Ci. | | Cu. | | | ≡° a. |
| 10 | 57.56 | 26.5 | 33.1 | 21.5 | 85.5 | SW quad. | 5.2 | 1.2 | Ci. | | Cu. | S | | ≡° a. |
| 11 | 58.02 | 26.8 | 32.9 | 21.5 | 84.2 | E | 7.1 | 1.7 | Ci. | | Cu.-N. | NE | | ≡ a. |
| 12 | 59.82 | 27.8 | 32.7 | 24.5 | 79.5 | NE | 11.5 | 2.7 | | | Cu.-N. | E | 4.5 | ● a. |
| 13 | 60.55 | 27.5 | 32.4 | 23.1 | 75.3 | NE | 14.6 | 2.2 | Ci. | | Cu. | E | | ● a. <° p. |
| 14 | 60.59 | 26.2 | 30.7 | 22.6 | 76.3 | NNE | 17.3 | 5.8 | Ci.-S. | | Cu., N. | E, NE | 4.8 | ●° p. |
| 15 | 60.87 | 25.6 | 29 | 23.1 | 88.2 | NE, NNE | 18.2 | 6.5 | Ci.-S. | | N. | ENE | 8.4 | ● a. p. |
| 16 | 61.34 | 26 | 29.2 | 23.3 | 87.7 | NE | 15.4 | 6.2 | Ci.-S. | | Cu.-N. | E | 4.4 | ● a. < d p. |
| 17 | 62.02 | 27.8 | 32 | 24.1 | 77.5 | NE | 14.6 | 2.5 | Ci. | | Cu. | E, ENE | | <° p. |
| 18 | 62.73 | 27.6 | 32.4 | 24.2 | 77.2 | NE | | 2.5 | Ci. | | Cu. | ENE | .8 | ●° p. |
| 19 | 61.92 | 26.4 | 31 | 24 | 85 | NE | 13 | 4.5 | Ci.-S. | | Cu.-N. | E | 30.9 | ● a. p. |
| 20 | 62.40 | 27 | 32 | 22 | 78.8 | NE quad. | 11.9 | 3 | | | Cu. | E, ENE | 1.3 | ● ⌒ a. |
| 21 | 63.35 | 27.4 | 31.6 | 22.6 | 75.5 | NE quad. | 15.3 | 2 | | | Cu. | ENE | 1.3 | ● a. |
| 22 | 62.90 | 27.2 | 32.3 | 23.9 | 75.5 | NE quad. | 15.7 | 1.5 | | | Cu. | E | .3 | <° p. |
| 23 | 62.80 | 27.1 | 31.5 | 23.1 | 74.7 | NE | 18.7 | 2 | | | Cu. | E, ENE | .5 | ●° a. |
| 24 | 62.89 | 26.5 | 30.1 | 23.1 | 79 | NE quad. | 18.7 | 2.5 | Ci.-S. | | Cu. | ENE | 1.1 | ●° a. p. |
| 25 | 61.72 | 26.9 | 31.9 | 23 | 73.7 | NE | 14 | 1.3 | | | Cu. | ENE | | <° p. |
| 26 | 61.40 | 26.7 | 31.5 | 23.1 | 72.2 | NE | 15.6 | 1.7 | Ci. | | Cu. | ENE, E | .8 | < p. |
| 27 | 61.35 | 26.9 | 31 | 23.2 | 72.3 | NE | 19.9 | 1.8 | | | Cu. | E | | ●° a. |
| 28 | 61.19 | 25.8 | 30.6 | 23.6 | 79.3 | NE | 14.2 | 5 | Ci. | WSW | Cu.-N. | E, ENE | .8 | ●° p. |
| 29 | 60.65 | 26.3 | 31 | 22.4 | 77.5 | NE | 13 | 4.5 | Ci. | | Cu. | ENE, E | | |
| 30 | 60.30 | 27.3 | 32.6 | 23 | 74.8 | NE | 14 | 4 | Ci., Ci.-S. | | Cu. | ENE | | < p. |
| 31 | 60.22 | 27.1 | 32 | 23.6 | 76 | NE | 14.5 | 2.8 | Ci. | | Cu. | ENE | | ●° p. |
| **Mean** | 760.51 | 26.7 | 31.3 | 23 | 79.4 | | 13.5 | 3.7 | | | | | | |
| **Total** | | | | | | | | | | | | | 71.7 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### ATIMONAN.

[$\phi$=14° 00′ N; $\lambda$=121° 55′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.74 mm.]

| Day. | Pressure (mean). | Temperature. Mean. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity (mean). | Wind. Prevailing direction. | Wind. Force (mean). | Clouds. Amount (mean). | Clouds. Prevailing form and its direction. Upper. | | Clouds. Prevailing form and its direction. Lower. | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | Km.p.h | 0–10. | | | | | mm. | |
| 1 | 761.09 | 26.4 | 28.8 | 23.8 | 80.5 | NE | 27.8 | 7.3 | A.-Cu. | NE | S.-Cu. | NE | 5.3 | ●° a. p. ☈ Ψ p. |
| 2 | 60.62 | 25.8 | 27.9 | 24.4 | 83.7 | NE | 26.9 | 6.5 | A.-Cu. | NE | S.-Cu. | NE | 3.4 | ●° a. d° ☈° p. |
| 3 | 60.63 | 26.6 | 28.8 | 24 | 78.8 | NE | 25.8 | 8.7 | A.-Cu. | NE | S.-Cu. | NE | 4.6 | d² a. ☈° p. |
| 4 | 59.94 | 25.6 | 26.8 | 23.4 | 88.8 | N quad. | 20.1 | 9 | A.-Cu. | NE | S.-Cu. | NE | 8.7 | ●° ⌒° a. d° ☈² p. |
| 5 | 59.97 | 26.9 | 29.2 | 24 | 80.7 | NE | | 5.5 | Ci. | | S.-Cu., Cu. | NE | | d° ☈² p. |
| 6 | 58.93 | 26.8 | 28.7 | 24.3 | 79.7 | NE | | 9 | Ci. | SE | S.-Cu. | NE | 4 | ○² a. d ⌒² ● ☈ p. |
| 7 | 57.70 | 25.9 | 27.7 | 22.1 | 76 | N quad. | | 9.8 | Ci.-S. | | S.-Cu. | NE | | ↙° a. ☈° p. |
| 8 | 56.41 | 26.4 | 29.6 | 21.9 | 73.7 | SW | 15.1 | 10 | Ci.-S. | | S. | W | | ☈ p. |
| 9 | 57.22 | 27.4 | 31.2 | 24.5 | 76.2 | S quad. | 12 | 6 | Ci. | | S.-Cu., Cu. | S, SW | | d ☈² p. |
| 10 | 56.95 | 27.4 | 32.2 | 23.8 | 77.7 | SW | 8.4 | 2.8 | Ci. | | Cu. | SW | | Ω a. |
| 11 | 57.48 | 26.8 | 30.4 | 23.4 | 82.7 | NE, N | 6.8 | 4.2 | A.-Cu. | SW | Cu. | S | | ☈ Ω a. |
| 12 | 59.70 | 26.4 | 30.7 | 23.4 | 85.8 | NE, W | 11.2 | 6.3 | A.-Cu. | E | S.-Cu. | NE | 2.3 | ☈ Ω² a. ●° d° p. |
| 13 | 60.88 | 27 | 29.6 | 25.2 | 76 | NE | 22.7 | 1.7 | Ci. | | Cu. | NE, E | | ☈ a. |
| 14 | 61.21 | 26.8 | 29 | 24.5 | 71.7 | NE | 27.2 | 5 | Ci. | | Cu., S.-Cu. | NE | | ↙° d° p. |
| 15 | 61.66 | 26.2 | 27.5 | 23 | 80 | NE | | 9.8 | Ci. | | S.-Cu. | NE | 8.4 | ↙° d° ● a. p. |
| 16 | 61.87 | 25.8 | 28 | 23.7 | 89 | NE | 16.1 | 7.5 | Ci.-Cu. | E | S.-Cu., N. | NE | 15.5 | ● a. p. |
| 17 | 62.21 | 25.9 | 30.4 | 21.3 | 81.7 | NE | 15.3 | 4.5 | A.-Cu. | E | S.-Cu., Cu. | NE, ENE | | Ω² ≡° a. |
| 18 | 63.13 | 26.5 | 29 | 24 | 79.5 | NE | 22.5 | 5.2 | A.-Cu. | E | S.-Cu. | NE | 1.5 | ↙° p. |
| 19 | 62.24 | 26.4 | 28.9 | 23.9 | 83.5 | NE quad. | 17 | 8.7 | A.-Cu. | E | S.-Cu. | NE | | ●° a. d° p. |
| 20 | 62.72 | 26.2 | 28 | 24.6 | 84.8 | NE | 24.7 | 8.5 | Ci.-S., Ci.-Cu. | | S.-Cu. | NE | 1.3 | d° a. |
| 21 | 63.48 | 26.5 | 30.3 | 24.4 | 79 | NE | | 3.3 | A.-Cu. | E | Cu. | E | | d° a. |
| 22 | 63.26 | 26.1 | 28.6 | 22.8 | 80 | NE | 22 | 4 | A.-Cu. | NE, E | S.-Cu. | NE | 1 | d ●° a. |
| 23 | 63.29 | 26.6 | 29 | 24.7 | 75.7 | NE | 27 | 2.7 | Ci.-Cu. | E | Cu. | NE, E | | d a. |
| 24 | 63.56 | 26.2 | 29 | 24.6 | 76.7 | NE | 30.4 | 4.8 | A.-Cu. | ENE | S.-Cu. | NE | .8 | d a. ↙° a. p. |
| 25 | 62.38 | 26.3 | 29.2 | 24 | 78.2 | NE | 25.1 | 2.7 | A.-Cu. | E | Fr.-Cu., S.-Cu. | NE | | |
| 26 | 61.64 | 26.4 | 29 | 24.5 | 74.7 | NE | 26.1 | 2.2 | Ci. | ENE | Cu. | NE | | |
| 27 | 61.90 | 26.3 | 28.5 | 24.5 | 75.7 | NE | 27.3 | 3.5 | A.-Cu. | ENE | S. | NE | .5 | ●° a. ↙° a. p. d° ☈² |
| 28 | 61.39 | 26.4 | 29.9 | 24.3 | 77.3 | NE | 23.5 | 5.2 | Ci. | W, N | Cu. | NE | | ☈² p. |
| 29 | 61.06 | 26.2 | 28.8 | 24.2 | 75.3 | NE | 23.4 | 6.2 | A.-Cu. | E | Cu. | NE | .3 | ☈° p. |
| 30 | 60.76 | 26.6 | 29 | 24.3 | 74.7 | NE | 23.1 | 5 | Ci. | SW quad. | Cu. | NE | | d ⌒ a. ☈ p. |
| 31 | 60.61 | 26.7 | 29.6 | 24.6 | 76.8 | NE | 23.3 | 4.2 | A.-Cu. | ENE | Cu. | NE | | d² a. ☈ p. |
| Mean | 760.84 | 26.4 | 29.1 | 23.9 | 79.2 | | 21.2 | 5.8 | | | | | | |
| Total | | | | | | | | | | | | | 57.6 | |

### PARACALE.

[$\phi$=14° 17′ N; $\lambda$=122° 47′ E; barometer above sea, 5.3 meters; gravity correction not applied, —1.73 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | Km.p.h | 0–10. | | | | | mm. | |
| 1 | 761.36 | 26.6 | 30.3 | 24.3 | 81.3 | ENE | 16.9 | 7.2 | Ci., Ci.-S. | | Cu. | NE | 3.1 | ● a. p. |
| 2 | 60.62 | 26.3 | 28 | 24.5 | 83.7 | NE | 20 | 8.5 | Ci., Ci.-S. | | Cu. | ENE | 8.1 | ● a. p. Ψ p. |
| 3 | 60.78 | 25.6 | 29.5 | 24 | 89.5 | NE | 12.7 | 10 | Ci.-S. | | Cu. | ENE | 20.3 | ● a. p. d p. |
| 4 | 60.11 | 25.8 | 29 | 23.9 | 90 | NE quad. | 11.2 | 7.7 | Ci.-S. | | S.-Cu., Cu. | ENE | 2.5 | ● a. |
| 5 | 60.24 | 26.6 | 30.3 | 24 | 84.2 | NE | 10.9 | 4.7 | Ci. | | Cu. | ENE | | Ω² a. d° a. p. Ψ² p. |
| 6 | 59.04 | 26.9 | 30.3 | 24 | 79.5 | NE | 16.7 | 8.5 | Ci.-S. | | Cu. | NE | 4.1 | Ψ ⊕ a. ⊕ Ψ ● p. |
| 7 | 57.49 | 25.7 | 27.8 | 23.5 | 78.5 | N quad. | 18.1 | 10 | Ci.-S. | | Cu. | N quad. | 6.6 | ● a. p. |
| 8 | 56.14 | 26 | 29 | 23.9 | 81 | SW | 14.2 | 10 | Ci.-S. | | Cu. | SW | .5 | ●° p. |
| 9 | 57.21 | 26 | 32.3 | 22.3 | 82.8 | SW | 6.7 | 1.3 | Ci. | | Cu. | SW | | Ω² a. p. |
| 10 | 57.14 | 26.3 | 32.7 | 21.9 | 85.5 | SW, N | 5.2 | 2.5 | Ci. | | Cu. | SW | | Ω² a. Ω p. |
| 11 | 58.02 | 25.9 | 31 | 21.5 | 87.7 | NNE | 5.5 | 2.5 | Ci. | | Cu. | SW | 5.9 | Ω² a. ● p. |
| 12 | 60.18 | 26.5 | 30.2 | 24.4 | 86.2 | E | 9.6 | 5.7 | Ci. | | Cu. | E | 3 | ● a. |
| 13 | 61.14 | 26.2 | 30.3 | 23.3 | 78.2 | ENE | 13.1 | 3 | Ci. | | Cu. | E | | Ω ● a. |
| 14 | 61.50 | 25.6 | 30 | 21 | 77 | E | 16.3 | 6.3 | Ci. | | Cu. | E | 1 | Ω a. |
| 15 | 61.98 | 26.3 | 28.7 | 24 | 79.5 | ENE | 24.3 | 10 | Ci.-S. | | Cu. | NE | 4.1 | ● a. p. |
| 16 | 61.92 | 26.1 | 28.8 | 23.7 | 88.5 | ENE | 16.8 | 10 | Ci.-S. | | Cu. | ENE | 9.6 | ● a. p. |
| 17 | 62.50 | 25.6 | 29.8 | 21.6 | 88.2 | ENE | 9.1 | 4 | Ci. | | Cu. | E | | Ω² a. |
| 18 | 63.39 | 26.6 | 30.3 | 24.8 | 79.8 | ENE | 14.7 | 5.5 | Ci. | | Cu. | E | .8 | Ω a. |
| 19 | 62.43 | 25 | 29.8 | 23 | 91.8 | NE | 9.7 | 9.5 | Ci.-S. | | Cu., S.-Cu. | E | 15.9 | ● a. p. |
| 20 | 63.04 | 25.4 | 27.8 | 23.5 | 90.3 | ENE | 15.4 | 8.8 | Ci.-S. | | Cu. | E | 13 | ● a. d a. p. |
| 21 | 63.82 | 26.2 | 29.8 | 23 | 81.2 | E | 11.9 | 4.2 | Ci. | | Cu. | E | 1 | Ω ●° a. |
| 22 | 63.53 | 25.8 | 30.3 | 23.5 | 82.3 | E | 12.5 | 7.7 | Ci., Ci.-S. | | Cu. | E | 6.3 | Ω ● d a. |
| 23 | 63.52 | 26.5 | 30.3 | 24.2 | 79.8 | NE | 15.5 | 3.3 | Ci. | | Cu. | E | .5 | Ω p ● ⌒ a. |
| 24 | 63.78 | 26 | 29.1 | 23.6 | 78.3 | NE | 19.1 | 6.8 | Ci., Ci.-S. | | Cu. | NE | .5 | d ●° p. |
| 25 | 62.48 | 26.3 | 30.3 | 24.4 | 78 | NE | 15.1 | 3.2 | Ci. | | Cu. | E | 1.3 | |
| 26 | 61.97 | 26.3 | 30.3 | 22.5 | 75 | NE | 13.3 | 5.7 | Ci., Ci.-S. | | Cu., S.-Cu. | E | | Ω ● a. |
| 27 | 62.15 | 26.6 | 30 | 24.5 | 76.8 | NE | 17.3 | 4.2 | Ci. | | Cu. | ENE | 6.4 | ●° a. ● p. |
| 28 | 61.68 | 26 | 29.8 | 23 | 80 | ENE | 12.9 | 6.5 | Ci. | | Cu. | ENE | .5 | ● a. d° Ψ p. |
| 29 | 61.43 | 26.1 | 29.8 | 23 | 76.2 | ENE | 13.2 | 7.8 | Ci., Ci.-S. | | Cu. | ENE | | ●° a. Ψ d° p. |
| 30 | 61.02 | 26.5 | 30.2 | 24.2 | 76.7 | E | 14.1 | 7.3 | Ci., Ci.-S. | | Cu. | ENE | 4.8 | p° Ψ° p. |
| 31 | 60.81 | 26.4 | 30 | 23.7 | 79.5 | E | 12.6 | 5 | Ci. | | Cu. | E | | ● d° a. |
| Mean | 761.05 | 26.1 | 29.9 | 23.4 | 82.2 | | 13.7 | 6.4 | | | | | | |
| Total | | | | | | | | | | | | | 119.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN ISIDRO.

[$\phi$=15° 22′ N; $\lambda$=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.69 mm.]

| Day. | Pressure (mean). | Temperature. |  |  | Relative humidity (mean). | Wind. |  | Clouds. |  |  |  |  | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | Mean. | Maximum. | Minimum. |  | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. |  | Lower. |  |  |  |
|  | *mm.* | *°C.* | *°C.* | *°C.* | *P. ct.* |  | *0–12.* | *0–10.* |  |  |  |  | *mm.* |  |
| 1 | 761.36 | 24.7 | 32.7 | 17.8 | 72.7 | NE | 2 | 3.3 | A.-Cu. | ESE | Cu. | E |  | Ω a. p. |
| 2 | 60.69 | 25 | 33.3 | 18 | 75.7 | NE, ENE | 1.5 | 3.2 | A.-Cu. | E | Cu. | NE |  | Ω a. p. ≡ a. d° p. |
| 3 | 60.75 | 24.4 | 32 | 18.6 | 78.2 | NNE, E | 1.7 | 4 | A.-Cu. | NE | Cu. | E |  | Ω a. p. |
| 4 | 60.26 | 25.1 | 32.9 | 19 | 77.8 | NE, E | 1.8 | 5.7 | A.-Cu. | NE | Cu. | E |  | Ω ≡° a. ⌽ p. |
| 5 | 59.83 | 26 | 32.4 | 21 | 75 | NE quad. | 1.8 | 5.2 | A.-Cu. | NE | Cu. | E |  | ⌽° a. Ω a. p. |
| 6 | 59.27 | 25.7 | 32.9 | 20.5 | 75.3 | NE | 1.8 | 6.7 | Ci. | S quad. | Cu. | E |  | ◯ a. p. ⌽ p. |
| 7 | 58.25 | 25.1 | 30.7 | 20 | 74.7 | N, NNE | 2.3 | 6.3 | Ci.-S. | ESE, SE | Cu. | E quad. |  | Ω ≡° a. |
| 8 | 56.43 | 23.9 | 27.3 | 21.8 | 92.7 | WSW, W | 1.8 | 10 | Ci.-S. | E | N. | W quad. | 12.7 | d ● p. |
| 9 | 56.58 | 26.4 | 32 | 23.4 | 91 | SW | 1.8 | 8.5 | Ci.-S. |  | N. | SW | 4.3 | d a. ⌽ $p^2$ p. |
| 10 | 57.08 | 25.6 | 31.6 | 22.6 | 88.3 | SW, NW | 2.2 | 7.7 | Ci.-S. |  | N. | SW |  | ≡ a. ⊤ p. |
| 11 | 57.73 | 26 | 32 | 23 | 88.3 | N | 1.7 | 7.5 | Ci. |  | Cu. | NE | 1.3 | d a. |
| 12 | 59.90 | 25.5 | 31.7 | 22 | 82.3 | NE | 2 | 5 | A.-Cu. | ENE, NE | Cu. | E |  | d° a. Ω a. p. |
| 13 | 60.92 | 25 | 32.2 | 20 | 77.8 | E, NE | 1.8 | 5 | A.-Cu. | ESE | Fr.-Cu. | E |  | Ω a. p. |
| 14 | 61.39 | 24.2 | 31.6 | 18.5 | 78.5 | NE | 1.7 | 3.2 | A.-Cu. | E | S.-Cu. | E |  | $Ω^2$ a. p. |
| 15 | 61.54 | 25 | 32 | 19.2 | 77.7 | NE | 1.3 | 4.5 | A.-Cu. | ENE | Fr.-Cu. | E |  | $Ω^2$ a. p. |
| 16 | 62.39 | 24.4 | 29.1 | 19.4 | 81.2 | NE | 1.8 | 5.7 | A.-Cu. | ESE | Cu. | E | 1 | Ω ≡° a. d° p. |
| 17 | 62.29 | 25.7 | 32.2 | 21 | 78.3 | NE | 2 | 4.2 | A.-Cu. | ESE | Cu. | E |  | d a. Ω p. |
| 18 | 63.24 | 24.7 | 31.4 | 18.9 | 77.2 | NE quad. | 3 | 3.2 | A.-Cu. | NE | Fr.-Cu. | E |  | ≡° a. Ω a. p. |
| 19 | 62.39 | 25.2 | 32.4 | 20.8 | 78.7 | NE, E | 2.2 | 5.3 | A.-Cu. | NE | Cu. | E |  | Ω p. |
| 20 | 62.76 | 25.7 | 33.1 | 20.5 | 75.2 | NNE, E | 2 | 3.8 | A.-Cu. | NE | Cu. | E |  | ≡° a. Ω a. p. |
| 21 | 63.83 | 25.6 | 31.5 | 21 | 76.7 | NE, E | 2.7 | 7.5 | A.-Cu. | NE | N. | E |  | d° p. |
| 22 | 63.40 | 25.1 | 32.1 | 19.9 | 74.7 | NE | 2.8 | 3.5 | Ci. |  | Cu. | E |  | ≡ a. Ω a. p. |
| 23 | 63.31 | 24.2 | 31.6 | 17 | 79.5 | NE, E | 2 | 4.8 | Ci. |  | Cu. | E | .5 | Ω ≡ a. d p. |
| 24 | 63.68 | 25.2 | 31.8 | 20.4 | 78.5 | NE, E | 2.2 | 4.8 | Ci. |  | N. | E |  | d° ≡° a. Ω ↙° p. |
| 25 | 62.66 | 24.6 | 32.4 | 20 | 77 | NE | 1.8 | 4.7 | A.-Cu. | ENE | Cu. | E |  | Ω a. p. |
| 26 | 61.91 | 24.4 | 32.1 | 17.9 | 76.2 | NE, NNE | 2.2 | 3.2 | Ci. |  | Cu. | E |  | ≡° a. Ω a. p. |
| 27 | 61.98 | 24.7 | 31.5 | 19 | 75.7 | NE | 2.3 | 6.2 | A.-Cu. | ENE | N., Cu. | E |  | Ω a. ↙° p. |
| 28 | 61.76 | 24.3 | 30.7 | 20 | 73.5 | NE | 1.5 | 6 | Ci. | SE | Cu. | E |  | Ω a. p. ◯ a. d° p. |
| 29 | 61.37 | 24 | 31.4 | 19 | 70.5 | NE quad. | 2.3 | 3.2 | Ci. | SE | Fr.-Cu, | E |  | Ω a. p. |
| 30 | 60.84 | 24 | 31.4 | 17.6 | 72.5 | NE, E | 2.2 | 4.5 | Ci. | SSW | Cu. | E |  | Ω a. p. ≡° a. ◯ p. |
| 31 | 60.84 | 23.5 | 31.3 | 16.5 | 76.8 | NE, E | 2 | 4.3 | A.-Cu. | NE | Cu. | E |  | Ω ≡° a. |
| Mean | 760.99 | 24.9 | 31.7 | 19.8 | 78.3 |  | 2 | 5.2 |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |  |  |  |  |  |  | 19.8 |  |

### DAGUPAN.

[$\phi$=16° 03′ N; $\lambda$=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *mm.* | *°C.* | *°C.* | *°C.* | *P. c.t* |  | *Km.p.h* | *0–10.* |  |  |  |  | *mm.* |  |
| 1 | 760.72 | 24.8 | 32.4 | 18.9 | 84.3 | SE | 7.8 | 0.2 |  |  | Cu. |  |  |  |
| 2 | 60.37 | 24.8 | 31 | 19 | 86.5 | Variable | 8.1 | .5 |  |  | Cu. |  |  |  |
| 3 | 60.32 | 25.2 | 30.6 | 20 | 87.8 | SE, NW | 7.2 | .8 |  |  | Cu. |  |  |  |
| 4 | 59.66 | 25.7 | 33.7 | 20 | 86.2 | SE | 7.8 | 1.5 |  |  | Cu., S.-Cu. |  |  | Ω° a. ⌽ p. |
| 5 | 59.30 | 25.9 | 31.7 | 21.4 | 85.5 | S quad. | 7.8 | 3.3 | A.-Cu. |  | Cu., S.-Cu. |  |  | Ω° a. |
| 6 | 58.80 | 25.9 | 32.4 | 20.6 | 84.2 | S, NW | 8.4 | 5.2 | Ci. |  | S.-Cu. | E |  | ⌽ p. |
| 7 | 57.87 | 25.8 | 31.3 | 21.8 | 84.5 | Variable | 6.9 | 7.8 | Ci.-S. |  | S.-Cu. | NNE |  | ⌽ a. p. |
| 8 | 55.56 | 25.8 | 27.8 | 23.7 | 92.7 | NW | 24 | 9.5 | A.-Cu. |  | N. | NW | 17.3 | ⌽ a. d° p° p. |
| 9 | 55.83 | 25.2 | 27.4 | 23.7 | 97.8 | W quad. | 15.8 | 10 |  |  | N. | WNW | 9.5 | ● a. p p. |
| 10 | 56.62 | 25.6 | 27.7 | 24 | 92.2 | NW | 18.3 | 9.5 | A.-Cu. |  | N. | NW | 3.5 | p° a. p. ↯° p. |
| 11 | 57.46 | 25.6 | 28.6 | 22.9 | 88.7 | NW, NNW | 10.6 | 6.2 | A.-Cu. |  | S.-Cu. | N, NW |  |  |
| 12 | 59.28 | 26.9 | 33.8 | 21.7 | 78.2 | SE, SSE | 8.3 | 2.7 | A.-Cu. |  | Cu., S.-Cu. |  |  | $Ω^2$ ≡ a. |
| 13 | 60.48 | 26.5 | 34.7 | 20.8 | 75.3 | Variable | 7.8 | 2 | Ci. |  | Cu., S.-Cu. |  |  | Ω a. |
| 14 | 60.98 | 25 | 30.9 | 20 | 81.2 | Variable | 7.1 | .7 | Ci. |  | Cu. |  |  | Ω a. |
| 15 | 61.08 | 25 | 31.8 | 19.9 | 79.7 | SE | 6.9 | 1 | Ci. |  | Cu. |  |  | $Ω^2$ a. |
| 16 | 61.91 | 25.7 | 31.6 | 20.4 | 78.8 | SE, NNW | 8.2 | 4.5 | A.-Cu. |  | Cu. |  |  | Ω° a. ⌒ p. |
| 17 | 61.70 | 26.2 | 30.6 | 22.6 | 80.5 | Variable | 9.3 | 5.2 | Ci.-S. |  | S.-Cu. | SE |  |  |
| 18 | 62.30 | 26.7 | 33.7 | 21.2 | 67.8 | SE, SSE | 15.2 | .5 |  |  | Cu. |  |  |  |
| 19 | 62.14 | 24.8 | 30.4 | 19.1 | 81.5 | NW quad. | 8.4 | 1.3 |  |  | Cu., S.-Cu. |  |  |  |
| 20 | 62.18 | 25.6 | 31.7 | 20.8 | 83.7 | SSE, N | 9.2 | .8 |  |  | Cu., S.-Cu. |  |  | ≡ $Ω^2$ a. |
| 21 | 63.07 | 25.9 | 31.8 | 21.5 | 80.5 | SE quad. | 8.7 | 3 | A.-Cu. |  | S.-Cu. | E |  |  |
| 22 | 62.84 | 26.3 | 34.1 | 21.4 | 78.7 | SE | 8.8 | .8 |  |  | Cu., S.-Cu. |  |  |  |
| 23 | 62.95 | 24.3 | 30.9 | 18.1 | 83.8 | Variable | 8.3 | 2 | Ci. |  | Cu. |  |  | $Ω^2$ a. |
| 24 | 62.82 | 25.5 | 34.5 | 20.5 | 81.7 | SE | 11.1 | 1.7 |  |  | S.-Cu. | E |  | $Ω^2$ a. |
| 25 | 62.31 | 24.7 | 30 | 19.3 | 86.5 | Variable | 8.1 | .8 |  |  | Cu., S.-Cu. |  |  |  |
| 26 | 61.49 | 24.4 | 31.5 | 19.4 | 84.3 | Variable | 9.3 | 1.2 | Ci., Ci.-S. |  | S.-Cu. |  |  | $Ω^2$ a. |
| 27 | 61.43 | 24.4 | 30.4 | 19.3 | 85.7 | SE, NNW | 7.6 | 1.5 | Ci. |  | S.-Cu. |  |  | Ω a. |
| 28 | 61.21 | 24.6 | 32.8 | 18.8 | 84 | Variable | 6.6 | 4.2 | Ci. |  | S.-Cu. |  |  | Ω ◯° a. |
| 29 | 60.97 | 24.4 | 31.3 | 19.1 | 85.3 | S quad. | 8.2 | 2.8 | Ci.-S. |  | Cu., S.-Cu. |  |  |  |
| 30 | 60.32 | 24.7 | 33.7 | 19.2 | 85.2 | Variable | 8.4 | 1.8 | Ci.-S. |  | S.-Cu. | SE |  |  |
| 31 | 60.09 | 25 | 33.6 | 19.2 | 81.7 | SE | 9.8 | 2 | Ci. |  | Cu. |  |  |  |
| Mean | 760.45 | 25.4 | 31.6 | 20.6 | 83.7 |  | 9.6 | 3.1 |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |  |  |  |  |  |  | 30.3 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### BOLINAO.

[$\phi$=16° 24′ N; $\lambda$=119° 53′ E; barometer above sea, 9.7 meters; gravity correction not applied, —1.65 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | P. ct. | | 0-12. | 0-10. | | | | | mm. | |
| 1 | 760.51 | 26.3 | 31.9 | 21.7 | 74.7 | SSE | 2.7 | 1.5 | Ci.-S. | | Cu. | | | Ω a. |
| 2 | 60.15 | 25.6 | 31.4 | 20.4 | 83.7 | SE quad. | 2.2 | 1.7 | Ci.-S., Ci. | | S.-Cu. | | | Ω a. |
| 3 | 60.11 | 25 | 31.5 | 19.4 | 86.5 | SE quad. | 2 | 2.2 | Ci. | | S.-Cu. | | | Ω$^2$ a. |
| 4 | 59.48 | 26.4 | 31.9 | 22.5 | 80.5 | SE | 2.7 | 2.7 | Ci. | | Cu. | | | Ω$^0$ a. |
| 5 | 59.28 | 26.3 | 31.5 | 21.7 | 86.7 | SE | 2.5 | 3.3 | Ci.-S. | | S.-Cu. | | | Ω a. |
| 6 | 58.72 | 25.8 | 31.5 | 20.6 | 87.2 | SE quad. | 2.5 | 9.2 | Ci.-S. | | S.-Cu. | | | Ω$^2$ a. ☇$^0$ p. |
| 7 | 57.74 | 26.4 | 31 | 21.3 | 83.5 | NNE | 2 | 10 | Ci.-S. | | S.-Cu. | | | Ω a. ☈$^0$ p. ○$^2$ a. p. |
| 8 | 55.84 | 26.6 | 29.5 | 25.1 | 90.2 | NNE | 6 | 10 | Ci.-S. | | Cu. | NNE | 17.2 | ☈$^0$ a. ● p. ↙$^0$ a. p. |
| 9 | 55.56 | 25.6 | 26.6 | 24.8 | 93.7 | WNW, NW | 5.2 | 10 | Ci.-S. | | N.-cf. | NW | 11.3 | ↙$^0$ ● a. p a. p. |
| 10 | 56.84 | 25.2 | 26.6 | 24.1 | 91.8 | N | 5.5 | 10 | Ci.-S. | | N.-cf. | NW, N | 4.1 | p a. p. ↙$^0$ p. |
| 11 | 57.55 | 25.1 | 26.5 | 24.2 | 88 | NNE | 6 | 9.2 | Ci.-S. | | Cu. | NE | | ↙ a. ↙$^0$ p. |
| 12 | 59.12 | 26.2 | 31.7 | 21.5 | 86.8 | SE quad. | 1.8 | 3.2 | Ci.-S. | | S.-Cu. | | | Ω a. |
| 13 | 60.27 | 27.1 | 32 | 23.4 | 76.5 | SE quad. | 2.8 | 6.5 | Ci.-S. | | S.-Cu. | | | Ω$^0$ a. |
| 14 | 60.82 | 26 | 30.5 | 22.1 | 85.8 | Variable | 1.8 | 4.5 | Ci.-S. | | Fr.-Cu. | NNE | | Ω a. |
| 15 | 60.98 | 25 | 30.6 | 20.1 | 84.2 | SE quad. | 2.5 | 4.5 | Ci.-S. | | S.-Cu. | | | Ω a. |
| 16 | 61.67 | 25.5 | 30.6 | 20.4 | 83.5 | N quad. | 2.2 | 4.2 | Ci. | | S.-Cu. | | | Ω a. |
| 17 | 61.57 | 26.1 | 30.6 | 22.7 | 83.5 | N quad. | 1.8 | 8.8 | Ci.-S. | | S.-Cu. | | | Ω a. ○$^0$ a. p. |
| 18 | 62.07 | 26.5 | 32.7 | 22.2 | 71.7 | SE quad. | 4 | 1.3 | Ci. | | S.-Cu. | | | Ω$^0$ a. |
| 19 | 62.03 | 25.3 | 30.1 | 19.8 | 82.2 | NNE | 3.2 | 2.5 | Ci. | | S.-Cu. | | | Ω a. |
| 20 | 62.19 | 25.3 | 30.5 | 20.8 | 88.2 | NNE | 2.3 | 2.7 | Ci. | | Cu. | NE | | Ω a. |
| 21 | 63.03 | 25.8 | 31.5 | 22 | 81.5 | SSE | 2.3 | 3 | Ci. | | S.-Cu. | | | Ω$^0$ a. |
| 22 | 62.69 | 26.8 | 32.1 | 22.5 | 79.5 | SSE | 3.2 | 3.8 | Ci. | | S.-Cu. | NE | | Ω$^0$ a. |
| 23 | 62.75 | 25.9 | 31.6 | 21.7 | 82 | SE quad. | 2.7 | 1.8 | Ci. | | S.-Cu. | | | Ω a. |
| 24 | 62.64 | 25.4 | 32.1 | 19.3 | 84.7 | SE quad. | 2.2 | 1 | Ci. | | S.-Cu., Cu. | | | Ω$^2$ a. |
| 25 | 62.17 | 25.8 | 31.1 | 21 | 81 | NNE | 3.3 | 1.3 | Ci. | | S.-Cu. | | | Ω a. |
| 26 | 61.28 | 26.2 | 31.1 | 21.5 | 79.3 | ESE, N | 3 | 8 | Ci.-S. | | Cu. | | | |
| 27 | 61.24 | 25.2 | 31 | 20.3 | 82.5 | NE quad. | 2.3 | 5.5 | Ci.-S. | | S.-Cu., Cu. | | | Ω a. |
| 28 | 60.96 | 25.5 | 31.5 | 20.6 | 81.8 | SE, ESE | 2.7 | 8.3 | Ci.-S. | | S.-Cu. | | | Ω$^0$ ○$^2$ a. ○$^0$ p. |
| 29 | 60.74 | 25.8 | 30.9 | 21.5 | 80.5 | SE quad. | 2.7 | 9.8 | Ci.-S. | | S.-Cu., Cu. | | | Ω$^0$ a. ○$^0$ p. |
| 30 | 60.06 | 25.9 | 31 | 21.5 | 81.2 | SSE, N | 2.7 | 8.5 | Ci.-S. | | S.-Cu. | | | Ω$^0$ a. |
| 31 | 59.97 | 25.1 | 31.3 | 18.6 | 80.5 | SE quad. | 2.3 | 9 | Ci.-S. | | S.-Cu. | | | Ω$^2$ ∞$^0$ a. |
| Mean | 760.32 | 25.8 | 30.8 | 21.6 | 83.3 | | 2.9 | 5.4 | | | | | | |
| Total | | | | | | | | | | | | | 32.6 | |

### BAGUIO.[a]

[$\phi$=16° 25′ N; $\lambda$=120° 36′ E; barometer above sea, 1,512.5 meters; gravity correction not applied, —1.65 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | Km.p.h | 0-10. | | | | | mm. | |
| 1 | 637.95 | 19.2 | 24.7 | 16.1 | 49.2 | SE quad. | 14 | 0.7 | | | Cu. | | | |
| 2 | 37.56 | 18.2 | 24.5 | 14.5 | 61 | SE | 12.9 | 1.7 | Ci. | | Cu. | | | |
| 3 | 37.58 | 18.1 | 24.3 | 14.4 | 68 | E, WSW | 12.2 | 2.4 | Ci. | | Cu. | | | ≡ p. |
| 4 | 37.14 | 18.4 | 24.8 | 14.9 | 68 | SE | 10.8 | 3 | Ci. | | Cu. | | | ≡ p. |
| 5 | 37.06 | 18 | 23.9 | 15.3 | 80.8 | E quad. | 12.3 | 6.6 | A.-Cu. | | S.-Cu. | SE | | ≡$^0$ p. |
| 6 | 36.39 | 17.4 | 23 | 14.3 | 86.7 | E | 9.9 | 7.1 | Ci. | | Cu. | | | Ω$^0$ a. ≡ p. |
| 7 | 35.55 | 17.1 | 20.7 | 14.5 | 86.8 | W quad. | 7.4 | 9.4 | Ci.-S. | SE | Cu. | NE | | Ω ○ a. ≡$^0$ p. ⊕ |
| 8 | 33.19 | 17.2 | 19.2 | 16 | 90.8 | W quad. | 25.9 | 9.9 | | | S.-Cu. | NE | 87.8 | p a. ● ≡$^2$ p. |
| 9 | 32.82 | 17.3 | 18.2 | 16.1 | 98.8 | W, WSW | 54.4 | 10 | | | | | 184 | ≡$^2$ ● ↙$^0$ a. p. |
| 10 | 34.22 | 18 | 22.5 | 16.4 | 98.8 | W | 14 | 9.7 | Ci.-S. | | Fr.-N. | | 4.8 | ≡$^2$ ● a. ≡ d$^0$ p. |
| 11 | 35.11 | 18 | 21.8 | 15.4 | 93.2 | E quad. | 12.9 | 7.6 | Ci., A.-Cu. | | S.-Cu. | E | | Ω a. ≡$^2$ p. |
| 12 | 37.13 | 18.5 | 24.4 | 15.5 | 88.8 | E quad. | 15.4 | 5.6 | A.-Cu. | | S.-Cu. | ENE, E | | Ω a. ≡$^2$ p. |
| 13 | 37.83 | 17.4 | 22.8 | 14.3 | 90.7 | Variable | 9.5 | 5.3 | Ci. | | Cu. | | | Ω a. ≡$^2$ p. |
| 14 | 37.86 | 16.2 | 21.8 | 12.9 | 89.2 | NE quad. | 11.7 | 3 | Ci. | | S.-Cu. | EbyS | | Ω$^2$ a. |
| 15 | 38.05 | 16.7 | 23.2 | 13 | 74.8 | E quad. | 18.2 | 2 | Ci. | | Cu. | | | |
| 16 | 38.76 | 17.2 | 23.3 | 14.1 | 77.5 | E quad. | 15.4 | 5.4 | Ci., A.-Cu. | | S.-Cu. | E, ESE | | Ω a. |
| 17 | 38.93 | 17.6 | 23.7 | 15.2 | 86.5 | E | 13.7 | 7.4 | Ci. | | S.-Cu. | EbyN | | |
| 18 | 39.31 | 17.6 | 23.4 | 13.9 | 62.7 | SE quad. | 24.7 | .3 | Ci. | | Cu. | | | ↙$^0$ a. |
| 19 | 38.94 | 18.2 | 23.4 | 14.9 | 78.3 | E, SE | 20.1 | 3.7 | | | S.-Cu. | ENE | | ≡ p. |
| 20 | 39.28 | 18.1 | 24 | 15.1 | 77.8 | SE quad. | 15.1 | 1.6 | Ci. | | Cu. | | | Ω a. ≡$^0$ p. |
| 21 | 40.05 | 17.4 | 23.7 | 14.5 | 82.2 | E, SE | 14.6 | 5.7 | A.-Cu. | | S.-Cu. | E | | p p. |
| 22 | 39.81 | 17.5 | 24.8 | 14.1 | 79.5 | SE | 10.4 | 3.3 | | | Cu. | | | Ω a. ≡$^0$ p. |
| 23 | 39.66 | 18.2 | 24.3 | 12.9 | 59.3 | E, SE | 16 | 1.4 | Ci. | | Cu. | E | | |
| 24 | 39.84 | 17.7 | 24.3 | 13.5 | 61.2 | E quad. | 15.1 | .9 | Ci. | | Cu. | | | Ω$^0$ a. |
| 25 | 38.98 | 17.8 | 22.8 | 13.1 | 64 | ESE | 17.6 | 2.6 | | | S.-Cu. | ESE | | ↙$^0$ a. |
| 26 | 38.15 | 16.8 | 23.3 | 12.8 | 63.3 | E quad. | 16.4 | 1.3 | Ci. | | Cu. | | | Ω a. |
| 27 | 38.10 | 17.2 | 23.2 | 14 | 63.2 | ESE | 21.9 | 3.4 | Ci. | | Cu. | | | |
| 28 | 37.97 | 17 | 22.4 | 13.5 | 65.2 | SE quad. | 16 | 7 | Ci.-S. | | Cu. | | | ○$^2$ a. p. |
| 29 | 37.55 | 16.1 | 22.6 | 12.4 | 83.5 | E quad. | 11.4 | 6.6 | Ci. | | S.-Cu. | E, S | | Ω a. |
| 30 | 37.20 | 16.8 | 22 | 13.6 | 86 | SE quad. | 11.9 | 6.7 | Ci. | | S.-Cu. | | | Ω a. ≡ p. |
| 31 | 37.24 | 16.8 | 23.8 | 13.6 | 73 | E, ESE | 17.7 | 4.9 | Ci. | | Cu. | E | | |
| Mean | 637.59 | 17.5 | 23.1 | 14.3 | 77.1 | | 16.1 | 4.7 | | | | | | |
| Total | | | | | | | | | | | | | 276.6 | |

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[a] The barometric readings of this station are not reduced to sea level.

## METEOROLOGICAL DATA, ETC.—Continued.

### VIGAN.

[$\phi$=17° 34′ N; $\lambda$=120° 23′ E; barometer above sea, 14.7 meters; gravity correction not applied, —1.61 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | | Lower. | | | |
| | mm. | °C. | °C. | °C. | P. ct. | | 0–12. | 0–10. | | | | | mm. | |
| 1 | 761.04 | 26.1 | 31.8 | 21.7 | 81.8 | Variable | 0.7 | 3 | | | Cu. | NNE | ------ | Ω a. |
| 2 | 60.78 | 25.9 | 31 | 21.5 | 85 | NW quad. | 1 | 1.8 | | | Fr.-Cu. | NNE | ------ | |
| 3 | 60.30 | 26.3 | 31.9 | 21.9 | 84.8 | N quad. | .8 | 2 | Ci. | | Cu. | | ------ | Ω a. |
| 4 | 59.84 | 25.7 | 30.8 | 21 | 85.3 | Variable | .5 | 1.5 | Ci. | | Cu. | NNE | ------ | Ω ≡$^\circ$ a. |
| 5 | 59.47 | 26 | 31.6 | 21.8 | 86.5 | Variable | .7 | 1.2 | Ci. | | Fr.-Cu. | NNE | ------ | |
| 6 | 58.76 | 26.4 | 31.3 | 21.7 | 84 | Variable | 1 | 3.3 | Ci. | | Cu. | NE | ------ | Ω a. |
| 7 | 58.12 | 27.1 | 31.7 | 22.6 | 61.3 | N, NE | 1.8 | 8.2 | Ci. | ESE | S.-Cu. | N | ------ | ○ a. p. |
| 8 | 54.98 | 24.8 | 26.5 | 22 | 94.2 | NNE | 4.8 | 10 | Ci.-S. | | N. | N quad. | 25.8 | d ● a. p. ↗$^\circ$ p. |
| 9 | 52.10 | 25.2 | 27.1 | 23.6 | 98.8 | SW quad. | 1.5 | 10 | A.-Cu. | WNW | Cu.-N. | SW | 5.6 | ● a. d$^\circ$ a. p. |
| 10 | 56.44 | 23.6 | 25 | 22.3 | 98.7 | NNE | 2.8 | 9.8 | A.-Cu. | | N. | N | .8 | d$^\circ$ a. p. |
| 11 | 57.88 | 23.5 | 25.8 | 21.7 | 95.2 | NNE | 3.3 | 5.3 | A.-Cu. | NNE | Cu. | N | 1.3 | ⚡ p. |
| 12 | 59.47 | 25.4 | 30.1 | 20.7 | 89.2 | Variable | .7 | 5.7 | A.-Cu. | E | S.-Cu. | ESE | ------ | ●$^\circ$ a. |
| 13 | 60.56 | 25.7 | 30.1 | 22 | 92.5 | Variable | .3 | 2 | Ci. | | Fr.-Cu. | NNE | ------ | Ω a. |
| 14 | 61.05 | 25 | 29.5 | 21.7 | 92.7 | N quad. | .7 | 2.5 | | | Cu. | NE | ------ | Ω a. |
| 15 | 61.12 | 25.2 | 31 | 20.2 | 83 | NW quad. | .2 | .2 | Ci. | | Cu. | | ------ | Ω a. |
| 16 | 61.92 | 25.3 | 30.2 | 20.4 | 84.3 | Variable | .5 | 1.8 | A.-Cu. | ESE | Cu. | | ------ | Ω a. |
| 17 | 61.75 | 25.8 | 31.2 | 21.6 | 87.5 | SW quad. | .3 | 5.3 | A.-Cu. | SSW | Cu. | W | ------ | Ω a. |
| 18 | 62.50 | 25.7 | 29.4 | 22.5 | 89 | N quad. | 1.3 | 2.8 | A.-Cu. | NE | Fr.-Cu. | N | ------ | Ω a. |
| 19 | 62.26 | 25 | 30.3 | 21 | 86.5 | N quad. | 1.2 | 0 | | | Fr.-Cu. | N | ------ | Ω a. |
| 20 | 62.45 | 25.4 | 30.5 | 20.8 | 90.5 | Variable | .3 | 1 | | | Cu. | NNE | ------ | Ω a. |
| 21 | 63.16 | 25.5 | 30.2 | 21.8 | 92 | NW quad. | .8 | 1.7 | Ci.-S. | S | S.-Cu. | NNW | ------ | Ω ≡$^\circ$ a. |
| 22 | 63 | 25.9 | 30.8 | 21.6 | 89.7 | ESE | .7 | 3.5 | | | Cu. | WSW | ------ | Ω ≡$^\circ$ a. |
| 23 | 62.96 | 25.4 | 30.1 | 21 | 87 | NNW, NE | .5 | 1.2 | Ci. | | Cu, S.-Cu. | | ------ | Ω a. |
| 24 | 62.87 | 26.2 | 31.1 | 22.7 | 87.7 | Variable | .5 | 2.5 | A.-Cu. | ENE | Cu. | W | ------ | Ω a. |
| 25 | 62.43 | 25.5 | 31.2 | 21.2 | 86.8 | NW quad. | .7 | 1 | Ci. | | S.-Cu. | | ------ | Ω a. |
| 26 | 61.47 | 24.6 | 30.2 | 20.1 | 88.8 | Variable | .3 | 3.3 | Ci. | SW, SSW | Cu. | NW | ------ | Ω ≡$^\circ$ a. |
| 27 | 61.43 | 25.1 | 30.5 | 20.2 | 88.7 | Variable | .7 | 2.7 | Ci. | SW | Cu. | ENE | ------ | Ω a. |
| 28 | 61.13 | 25 | 30.6 | 20.7 | 81.8 | ESE | 1 | 6 | Ci. | SW | Cu. | | ------ | Ω a. ○ a. p. ψ p. |
| 29 | 60.82 | 25.2 | 30.1 | 20.7 | 87 | Variable | 1 | 6.8 | Ci.-S. | WSW | Cu. | NE | ------ | ψ Ω a. ≡$^\circ$ p. |
| 30 | 60.27 | 25.3 | 30.3 | 20.7 | 87 | SW quad. | .5 | 3.3 | Ci. | SW | Cu. | | ------ | Ω ≡$^\circ$ a. |
| 31 | 60.22 | 25.9 | 30.1 | 22 | 85.3 | SE | 1 | 2.3 | A.-Cu. | | Cu. | SE | ------ | Ω a. |
| Mean | 760.40 | 25.4 | 30.1 | 21.5 | 87.5 | | 1 | 3.6 | | | | | ------ | |
| Total | | | | | | | | | | | | | 33.5 | |

### TUGUEGARAO.

[$\phi$=17° 36′ N; $\lambda$=121° 40′ E; barometer above sea, 23 meters; gravity correction not applied, —1.61 mm.]

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm. | °C. | °C. | °C. | P. ct. | | 0–12. | 0–10. | | | | | mm. | |
| 1 | 762.14 | 24.5 | 33.4 | 18.2 | 79.2 | SE | 0.3 | 1.3 | | | Cu. | SE | ------ | Ω$^2$ ≡ a. |
| 2 | 61.51 | 24.3 | 32.3 | 17.3 | 80.3 | SE, NW | .3 | 4.3 | | | Cu. | E, SE | ------ | Ω$^2$ ≡$^2$ a. |
| 3 | 61.27 | 25 | 33 | 20.1 | 83.2 | SW | .2 | 4.5 | | | Cu. | W, SE | ------ | Ω$^2$ a. |
| 4 | 60.64 | 24.8 | 33.7 | 18.4 | 79.7 | NW, SW | .3 | 3.2 | | | S.-Cu. | SE | ------ | Ω$^2$ a. |
| 5 | 60.46 | 25.9 | 34.6 | 21 | 78.5 | SE | .2 | 4.2 | | | Fr.-Cu. | S | ------ | Ω$^\circ$ a. |
| 6 | 60.36 | 24 | 28.3 | 21.2 | 84.5 | NW | 1.2 | 7.5 | Ci. | | Cu.-N. | N | ------ | Ω$^\circ$ d$^\circ$ a. |
| 7 | 59.68 | 23.3 | 29.1 | 19.2 | 85.8 | NW | 2.2 | 6.8 | Ci.-S. | | Cu., Cu.-N. | N, NE | 16.7 | Ω$^2$ a. ● p. |
| 8 | 50.90 | [a] | ------ | ------ | ------ | NW | 5.5 | 10 | | | Cu.-N. | N | 185.1 | ●$^2$ a. p. ↗$^2$ p. |
| 9 | 52.38 | ------ | ------ | ------ | ------ | S quad. | 1.3 | 10 | | | Cu.-N. | S, SW | 19.5 | ● a. p. d p. |
| 10 | 55.07 | 25.8 | 31.2 | 23.3 | 88.3 | NW | 1.3 | 8.5 | Ci.-S. | | Cu.-N. | N | 19.3 | d$^\circ$ ⌒$^2$ a. ● p. |
| 11 | 58.23 | 23.3 | 26.5 | 21.5 | 95.7 | NW | 2.7 | 9 | | | N. | N | 13 | ● a. |
| 12 | 60.81 | 24.6 | 30.4 | 21.8 | 91 | NW | .2 | 10 | | | Cu.-N. | N, NE | 11.2 | ● a. p. |
| 13 | 61.51 | 24.9 | 32 | 21.3 | 91 | SE | .7 | 4 | | | Cu.-N. | NE | ------ | ≡$^2$ a. |
| 14 | 62.41 | 23.8 | 30.7 | 19.6 | 87.3 | NW | .7 | 1.8 | | | Fr.-Cu. | NE | ------ | Ω$^2$ ≡$^2$ a. |
| 15 | 63.23 | 24.1 | 30.6 | 20.1 | 82.7 | NW | .5 | 3.7 | | | Cu. | NW | ------ | Ω$^2$ a. |
| 16 | 63.60 | 23.8 | 29.5 | 20.1 | 89.8 | S | .2 | 5 | | | Cu. | NW | ------ | Ω$^2$ a. |
| 17 | 63.44 | 24.8 | 31.3 | 21 | 88.7 | Calm | 0 | 4.7 | Ci.-S. | | Cu. | NW | ------ | Ω a. |
| 18 | 63.91 | 24.9 | 32.7 | 20.4 | 81.7 | SW | .7 | .8 | | | Fr.-Cu. | S | ------ | Ω$^2$ a. |
| 19 | 63.06 | 24.6 | 32.5 | 18.5 | 84.5 | Variable | .5 | 2.8 | Ci.-S. | | Variable | | ------ | Ω$^2$ a. |
| 20 | 63.74 | 24.9 | 32 | 20.8 | 86 | Calm | 0 | 5 | | | Cu. | E | ------ | d$^\circ$ a. |
| 21 | 65.09 | 23.8 | 29.7 | 19.5 | 87 | Calm | 0 | 6.2 | Ci.-S. | | S.-Cu. | S | ------ | Ω a. |
| 22 | 64 | 24.5 | 31.8 | 20.5 | 83.2 | Variable | .7 | 2.5 | | | Cu. | S | ------ | Ω$^2$ ≡ a. |
| 23 | 64.74 | 22.7 | 28.8 | 17.4 | 88.8 | NE | .5 | 6 | Ci.-Cu. | | Cu. | NE, N | 5.8 | Ω$^2$ ≡$^\circ$ a. p d p. |
| 24 | 64.73 | 24.6 | 32.5 | 21.2 | 88.8 | SW | .3 | 5.7 | | | Cu.-N. | S | ------ | ● d a. |
| 25 | 63.19 | 24.2 | 32.4 | 18.4 | 83.3 | SSW, SW | .3 | 0 | | | | | ------ | Ω$^2$ a. |
| 26 | 63.16 | 23.9 | 30.8 | 19 | 83.5 | SW | .5 | 7.8 | | | Cu.-N. | S | ------ | Ω$^2$ a. d$^\circ$ p. |
| 27 | 63.38 | 23.8 | 32.3 | 19.5 | 85 | Variable | .5 | 4.5 | Ci. | | Cu. | S, SW | ------ | Ω$^2$ ⌒$^2$ a. |
| 28 | 63.19 | 21.8 | 28.5 | 17 | 88.2 | Calm | 0 | 4.8 | Ci.-S. | | Cu.-N. | SE | ------ | Ω$^2$ ≡$^2$ a. |
| 29 | 62.52 | 22.4 | 28.6 | 19 | 88.7 | NW | .5 | 9 | Ci. | | Cu.-N. | N | 5.3 | Ω$^2$ a. d p p. |
| 30 | 61.44 | 24.2 | 30.6 | 21 | 88.8 | NE | .2 | 8.2 | | | N. | N | 8.1 | ⌒$^2$ ● p. |
| 31 | 61.39 | 24.4 | 31 | 20.6 | 84.8 | SE | .7 | 6.8 | | | N., Cu. | S | ------ | d$^\circ$ a. |
| Mean | 761.46 | 24.2 | 31.1 | 19.9 | 85.8 | | .7 | 5.4 | | | | | ------ | |
| Total | | | | | | | | | | | | | 284 | |

[a] At 3.10 p. m. of the 8th, the thermometer-shelter was blown down and destroyed by the violence of the wind.

## METEOROLOGICAL DATA, ETC.—Continued.

### APARRI.

[$\phi$=18° 22′ N; $\lambda$=121° 38′ E; barometer above sea, 5 meters; gravity correction not applied, —1.57 mm.]

| Day. | Pressure (mean). | Temperature. | | | Relative humidity (mean). | Wind. | | Clouds. | | | Rain, 24 hours beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean. | Maximum. | Minimum. | | Prevailing direction. | Force (mean). | Amount (mean). | Prevailing form and its direction. Upper. | Prevailing form and its direction. Lower. | | |
| | mm. | °C. | °C. | °C. | P. ct. | | Km.p.h | 0-10. | | | mm. | |
| 1 | 761.88 | 24.3 | 30.4 | 19.6 | 80.5 | E | 10.6 | 0 | | | | Ω a. |
| 2 | 61.45 | 24.5 | 29.4 | 20.1 | 78.5 | E | 11.3 | 3.2 | A.-Cu. | S.-Cu. E | 0.5 | Ω a. ●° p. |
| 3 | 61.21 | 25 | 29 | 21.7 | 82 | E | 10.3 | 2.7 | A.-Cu. SE | S.-Cu. E | | |
| 4 | 60.46 | 24.2 | 30.3 | 19.7 | 84.2 | NE, E | 10.1 | 0 | | | | Ω a. |
| 5 | 60.48 | 24.9 | 30.2 | 21.1 | 83.3 | E quad. | 14 | 0 | | | | Ω a. |
| 6 | 60.45 | 24.6 | 28 | 21.1 | 81.8 | E, NE | 13.6 | 3.7 | | Cu.-N. E quad. | | Ω ●° a. |
| 7 | 60.11 | 24.9 | 28 | 21.1 | 78 | E, NE | 16.3 | 9 | Ci. | Cu.-N. E, ENE | 5.1 | ● a. ●° p. |
| 8 | 54.54 | 24.2 | 25.3 | 22.6 | 93.7 | NE | 38.9 | 10 | | N. NE | 180.6 | ● a. ●² ↙° p. |
| 9 | 52.42 | 24.5 | 26.5 | 23 | 93.8 | E | 18.7 | 10 | | N., S.-Cu. SSE, S | 103.6 | ●² a. p. |
| 10 | 54.71 | 24 | 27.1 | 22.6 | 93.7 | SW, W | 18 | 10 | Ci.-S. SE | S.-Cu. W | 4.1 | ● a. ●° ☇ p. |
| 11 | 58.32 | 23.4 | 24.5 | 22.1 | 91.8 | N, NE | 33 | 10 | | N. NE, N | 24.8 | ●° a. p. |
| 12 | 60.86 | 23.4 | 24.5 | 21.9 | 94.5 | E, NE | 17.3 | 10 | | N. NE | 14 | ● a. p. |
| 13 | 61.29 | 24.3 | 29.4 | 21 | 86.7 | E, S | 7.9 | 0 | | | | Ω a. |
| 14 | 62.57 | 23.7 | 28.5 | 20.6 | 87.3 | E | 7.8 | 3.8 | A.-Cu. E | S.-Cu. NE | .8 | Ω a. ●° p. |
| 15 | 63.26 | 24.4 | 28.9 | 21.1 | 81.7 | E | 10.3 | .8 | | S.-Cu. | | |
| 16 | 63.57 | 23.3 | 27.5 | 20.3 | 86.7 | E | 5.7 | 3.3 | | S.-Cu. E, SE | | Ω a. |
| 17 | 63.17 | 24 | 28.6 | 21.1 | 88.8 | E, NE | 5.7 | 4.8 | Ci., A.-Cu. S, E | S.-Cu. ENE | | ≡° a. Ω a. p. |
| 18 | 63.49 | 24.7 | 30.5 | 21.1 | 80.3 | SE | 11.3 | .2 | | Cu.-N. | | Ω a. |
| 19 | 62.66 | 24 | 29.5 | 19.6 | 83 | S, E | 10 | 0 | | | | Ω a. |
| 20 | 63.57 | 24.5 | 28.5 | 21.2 | 83.3 | NE, E | 10 | 0 | | | | Ω a. |
| 21 | 64.65 | 23 | 28 | 20.2 | 88.8 | E | 5.4 | 7.8 | | S.-Cu. SE, E | | Ω a. |
| 22 | 63.64 | 24.3 | 30 | 20.9 | 85.2 | Variable | 11.7 | 0 | | | | Ω a. |
| 23 | 64.64 | 22.9 | 27.4 | 19.1 | 88.3 | NE | 10.9 | 6.2 | | S.-Cu. ENE | .5 | Ω a. ●° p. |
| 24 | 64.37 | 24.6 | 29.5 | 21.5 | 81.2 | E | 11.1 | .3 | | S.-Cu. | | Ω a. |
| 25 | 62.84 | 23.8 | 29.7 | 20.1 | 80.2 | SE, E | 10.4 | 0 | | | | Ω a. |
| 26 | 62.72 | 24 | 29.2 | 19.6 | 81.2 | E | 8 | 3.7 | A.-Cu. SE | S.-Cu. | | Ω a. |
| 27 | 63.18 | 24 | 29.2 | 20.6 | 81.3 | E, SE | 10.3 | 3.3 | Ci. SW | S.-Cu. SE | | |
| 28 | 62.76 | 23.1 | 27.4 | 18.7 | 81.8 | E, SE | 5.8 | 5 | | S.-Cu. SE | | Ω a. |
| 29 | 62.38 | 21.9 | 27.4 | 19.6 | 92.5 | E quad. | 7.4 | 7.3 | | Cu.-N. SW, NE | 17.8 | Ω a. ● p. |
| 80 | 61.43 | 23.4 | 28 | 20.6 | 89.5 | NE, SW | 8.6 | 7.7 | A.-Cu. | Cu.-N., S.-Cu. E | 1.8 | ●° a. p. ⌒ p. |
| 31 | 60.91 | 23.8 | 29 | 20.2 | 84.8 | E quad. | 8.6 | 3 | A.-Cu. E | S.-Cu. | | ≡° a. ⌒ p. |
| Mean | 761.42 | 24 | 28.4 | 20.8 | 85.4 | | 12.2 | 4.1 | | | | |
| Total | | | | | | | | | | | 353.6 | |

## METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

### JOLO.

[$\phi$=6° 03′ N; $\lambda$=121° 00′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10 | 0-10 | mm. |  |
| 1 |  |  |  |  | 6 | 8 |  | Ω° a. |
| 2 |  |  |  |  | 6 | 8 |  | Ω a. |
| 3 |  |  |  |  | 8 | 8 |  | Ω a. Ⓣ² p. |
| 4 |  |  |  |  | 10 | 10 |  | Ⓣ² p. |
| 5 |  |  |  |  | 10 | 8 |  | Ω a. Ⓣ° p. |
| 6 |  |  |  |  | 10 | 10 |  | Ω a. |
| 7 |  |  |  |  | 10 | 10 |  | Ω² ●° a. |
| 8 |  |  |  |  | 6 | 8 |  | Ω a. |
| 9 |  |  |  |  | 8 | 4 |  | Ω a. |
| 10 |  |  |  |  | 4 | 8 |  | Ω a. |
| 11 |  |  |  |  | 5 | 10 |  | Ω a. |
| 12 |  |  |  |  | 8 | 6 | 8.9 | Ω a. ● p. |
| 13 |  |  |  |  | 6 | 8 |  | Ω a. ↯² p. |
| 14 |  |  |  |  | 6 | 10 |  | Ω a. |
| 15 |  |  |  |  | 8 | 6 | 52.1 | Ω a. d ●² p. |
| 16 |  |  |  |  | 10 | 10 |  |  |
| 17 |  |  |  |  | 6 | 6 |  | Ω a. |
| 18 |  |  |  |  | 4 | 5 |  | Ω a. |
| 19 |  |  |  |  | 5 | 8 |  | Ω a. |
| 20 |  |  |  |  | 6 | 8 |  | Ω a. |
| 21 |  |  |  |  | 5 | 5 |  | Ω a. |
| 22 |  |  |  |  | 6 | 6 |  | d a. |
| 23 |  |  |  |  | 6 | 4 |  | Ω a. |
| 24 |  |  |  |  | 6 | 6 |  |  |
| 25 |  |  |  |  | 5 | 6 |  | ⌣² p. |
| 26 |  |  |  |  | 8 | 8 | 3.3 | p a. p. ⌣² p. |
| 27 |  |  |  |  | 10 | 10 | 26.2 | ●° a. Ⓣ² p. |
| 28 |  |  |  |  | 10 | 8 |  | ●² a. d a. p. |
| 29 |  |  |  |  | 8 | 8 |  | Ⓣ° p. |
| 30 |  |  |  |  | 8 | 8 |  | d° a. Ⓣ° p. |
| 31 |  |  |  |  | 8 | 5 |  | Ⓣ° p. |
| Mean |  |  |  |  | 7.2 | 7.5 |  |  |
| Total |  |  |  |  |  |  | 90.5 |  |

### ISABELA, BASILAN.

[$\phi$=6° 42′ N; $\lambda$=121° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10 | 0-10 | mm. |  |
| 1 | 31.3 | 21.5 | 92 | 77 | 8 | 4 | 0.5 | Ω a. |
| 2 | 32.3 | 21.5 | 96 | 69 | 9 | 9 |  | ●° a. |
| 3 | 31.1 | 22 | 96 | 68 | 1 | 5 |  | Ω a. |
| 4 | 31.1 | 21.4 | 95 | 72 | 2 | 8 |  | Ω° a. |
| 5 | 31.8 | 22 | 97 | 76 | 10 | 10 |  | d a. ⌣ ↯ p. |
| 6 | 29.3 | 22 | 89 | 76 | 9 | 10 |  | Ω a. |
| 7 | 29.8 | 21 | 95 | 69 | 10 | 3 |  | Ω a. ⌣ p. |
| 8 | 30.3 | 22 | 96 | 73 | 0 | 4 |  | Ω a. ⊤ p. |
| 9 | 30.3 | 21.4 | 96 | 65 | 0 | 5 |  | Ω a. |
| 10 |  | 21.4 | 95 | 63 | 0 | 4 |  | Ω a. |
| 11 | 30.5 | 21 | 88? | 81 | 3 | 10 |  | Ω a. p p. |
| 12 | 32.5 | 22 | 93 | 69 | 2 | 4 |  | Ω a. |
| 13 | 30.8 | 22.4 | 96 | 68 | 2 | 4 |  | Ω a. |
| 14 | 32.1 | 22 | 96 | 68 | 2 | 9 |  | Ω a. |
| 15 | 31.7 | 22.4 | 88? | 75 | 2 | 8 | 49.8 | Ω a. ● ⌈↯ p. |
| 16 | 32.7 | 21 | 97 | 76 | 10 | 9 |  | ● a. |
| 17 | 31.7 | 22.5 | 97 | 69 | 3 | 4 |  | Ω a. |
| 18 | 33.3 | 21.9 | 93 | 57 | 1 | 3 |  | Ω a. |
| 19 | 31.3 | 22.4 | 94 | 55 | 0 | 3 |  | Ω a. |
| 20 |  | 20.5 | 95 | 54 | 0 | 5 |  | Ω a. |
| 21 | 32.8 | 21.5 | 91 | 72 | 0 | 2 |  | Ω a. |
| 22 | 30.9 | 21.5 | 82 | 52 | 10 | 6 |  | Ω° a. |
| 23 | 31.9 | 20.2 | 95 | 62 | 0 | 3 |  |  |
| 24 | 31.9 | 21.6 |  | 63 | 8 | 5 |  |  |
| 25 | 33.1 | 21 |  | 81 | 3 | 9 | 34.5 | Ω° a. ⌈↯ ●² p. |
| 26 | 32.3 | 22.5 | 85 | 73 | 10 | 7 | 4.6 | d a. ●° p. |
| 27 | 31.3 | 23 | 93 | 72 | 10 | 8 | 3 | d ⊤ a. p p. |
| 28 | 30.8 | 22.2 | 88 | 71 | 10 | 9 |  | p° a. p. |
| 29 | 29.8 | 21.9 | 94 | 71 | 8 | 6 |  | Ω a. |
| 30 |  | 23.5 | 96 | 72 | 10 | 3 |  | Ω a. |
| 31 |  | 22.5 | 96 | 64 | 3 | 9 | 4.8 | Ω a. ●° p. |
| Mean | 31.4 | 21.8 | 93.2 | 68.8 | 4.7 | 6.1 |  |  |
| Total |  |  |  |  |  |  | 97.2 |  |

### ZAMBOANGA.

[$\phi$=6° 54′ N; $\lambda$=122° 05′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6. a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10 | 0-10 | mm. |  |
| 1 | 32 | 23.5 | 88 | 81 | 10 | 4 |  | d a. |
| 2 | 30.4 | 23.1 | 94 | 77 | 10 | 9 |  |  |
| 3 | 30.5 | 22.9 | 89 | 77 | 5 | 4 | 0.8 | p p. |
| 4 | 30.1 | 22.9 | 86 | 77 | 9 | 9 | 2 |  |
| 5 | 29.8 | 23.5 | 95 | 79 | 9 | 10 |  | ●° ⌒ a. |
| 6 | 29.3 | 23.4 | 89 | 84 | 9 | 10 |  |  |
| 7 | 29 | 22.8 | 89 | 81 | 10 | 10 |  |  |
| 8 | 30 | 21.9 | 82 | 71 | 9 | 7 |  |  |
| 9 | 29.7 | 22.4 | 82 | 79 | 5 | 3 |  |  |
| 10 | 29.3 | 23 | 84 | 78 | 5 | 5 |  |  |
| 11 | 30.1 | 23.4 | 86 | 68 | 10 | 10 | .8 | ●° p. |
| 12 | 32 | 23 | 95 | 65 | 8 | 3 |  |  |
| 13 | 30.3 | 22.6 | 90 | 77 | 4 | 4 |  |  |
| 14 | 31.1 | 22.9 | 89 | 68 | 4 | 8 |  |  |
| 15 |  |  | 89 |  | 4 |  | 28.4 | ⌈↯ ● p. |
| 16 |  |  |  | 80 |  | 10 |  | d p. |
| 17 | 32.4 | 23.4 | 86 | 52 | 4 | 8 |  |  |
| 18 | 32.5 | 22.8 | 91 | 80 | 8 | 7 |  |  |
| 19 | 31.6 | 23.1 | 92 | 40 | 7 | 3 |  | Ω° a. |
| 20 | 30.5 | 21.2 | 81 | 68 | 2 | 3 |  |  |
| 21 | 32.1 | 21.7 | 88 | 71 | 2 | 3 |  |  |
| 22 | 32.1 | 22.5 | 80 | 44 | 3 | 3 |  |  |
| 23 | 29.6 | 20.9 | 89 | 73 | 3 | 2 |  | Ω° a. |
| 24 | 32 | 23.1 | 90 | 72 | 5 | 9 |  |  |
| 25 | 31.5 | 21 | 83 | 73 | 3 | 7 | 49.5 | Ω° a. ●² p. |
| 26 | 31.6 | 22.5 | 97 | 57 | 8 | 9 | 7.1 | ● p. |
| 27 | 31.5 | 23.5 | 95 | 79 | 8 | 6 |  | Ω° ≡° a. d p. |
| 28 | 31.5 | 23.4 | 83 | 52 | 9 | 9 |  |  |
| 29 | 29.8 | 21.9 | 96 | 77 | 9 | 6 |  | Ω ≡° a. |
| 30 | 30.5 | 23.2 | 91 | 81 | 9 | 7 |  |  |
| 31 | 30.1 | 23 | 88 | 79 | 5 | 3 |  | d ↯ p. |
| Mean | 30.8 | 22.7 | 88.6 | 71.3 | 6.5 | 6.4 |  |  |
| Total |  |  |  |  |  |  | 88.6 |  |

### DAVAO.

[$\phi$=7° 01′ N; $\lambda$=125° 35′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10 | 0-10 | mm. |  |
| 1 | 31.4 | 21.5 | 96 | 73 | 6 | 5 |  |  |
| 2 | 31.6 | 22.1 | 98 | 74 | 6 | 7 |  |  |
| 3 | 31.7 | 21.4 | 96 | 70 | 5 | 9 | 1.3 | ●° p. |
| 4 | 31.9 | 21.6 | 96 | 70 | 5 | 6 |  |  |
| 5 | 32.7 | 22.6 | 96 | 69 | 6 | 5 |  | ⊤ p. |
| 6 | 31.7 | 21.9 | 96 | 64 | 6 | 7 | 24.4 | ● ⊤ p. |
| 7 | 31.8 | 21.5 | 96 | 70 | 5 | 5 | 14.5 | ● ⊤ p. |
| 8 | 31 | 22.4 | 97 | 68 | 6 | 7 | 12.2 | ● p. |
| 9 | 30 | 22.1 | 99 | 75 | 5 | 9 |  |  |
| 10 | 30.6 | 22.5 | 98 | 71 | 6 | 5 | 17 | ● p. |
| 11 | 30.2 | 22.1 | 97 | 79 | 9 | 8 |  | d p. |
| 12 | 31.2 | 21.6 | 96 | 64 | 7 | 6 |  |  |
| 13 | 31.2 | 21.7 | 96 | 70 | 5 | 7 |  |  |
| 14 | 30.3 | 20.9 | 96 | 90 | 6 | 5 | 9.7 | ● p. |
| 15 | 31.3 | 21.9 | 96 | 76 | 6 | 5 | 13 | ● p. |
| 16 | 30.7 | 21.9 | 96 | 75 | 6 | 8 |  |  |
| 17 | 30.7 | 22.2 | 96 | 73 | 6 | 5 |  |  |
| 18 | 31.2 | 21.1 | 91 | 63 | 6 | 5 |  |  |
| 19 | 31.3 | 19.6 | 91 | 67 | 7 | 6 |  |  |
| 20 | 31.6 | 21.3 | 96 | 66 | 5 | 6 | 21.8 | ● ⌈↯ p. |
| 21 | 30.6 | 22 | 96 | 68 | 5 | 8 |  |  |
| 22 | 31.1 | 20.2 | 97 | 70 | 5 | 6 |  |  |
| 23 | 31.7 | 20.5 | 95 | 74 | 5 | 8 |  |  |
| 24 | 31.3 | 22.4 | 96 | 65 | 10 | 6 |  | d a. |
| 25 | 30.7 | 21.8 | 96 | 81 | 5 | 9 |  |  |
| 26 | 30 | 22.4 | 97 | 80 | 9 | 8 | 17 | ● a. |
| 27 | 31.2 | 22.3 | 96 | 80 | 6 | 8 | 11.7 | ● p. |
| 28 | 28.9 | 21.6 | 88 | 78 | 8 | 9 | 23.6 | ● a. p. |
| 29 | 30 | 20 | 95 | 71 | 8 | 7 | 14.5 | ● p. |
| 30 | 31.2 | 21.3 | 96 | 69 | 6 | 8 | 6.1 | ● p. |
| 31 | 30.2 | 21 | 96 | 81 | 6 | 9 | 11.7 | ● p. |
| Mean | 31 | 21.6 | 95.7 | 72.4 | 6.2 | 6.8 |  |  |
| Total |  |  |  |  |  |  | 198.5 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### CAGAYAN, MISAMIS.

[$\phi$=8° 29′ N; $\lambda$=124° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.5 | 21.1 | 88 | 64 | 1 | 6 | ------ | Ω a. |
| 2 | 30.2 | 21.6 | 86 | 64 | 5 | 9 | ------ | Ω a. |
| 3 | 30 | 22 | 90 | 70 | 10 | 10 | 4.3 | Ω² a. d a. p. |
| 4 | 28.6 | 23.4? | 97 | 79 | 10 | 6 | ------ | d a. |
| 5 | 28.9 | 22.6 | 97 | 81 | 9 | 9 | ------ | Ω² a. ψ p. |
| 6 | 30.2 | 22.8 | 90 | 74 | 6 | 8 | .8 | Ω a. d p. |
| 7 | 29.1 | 23 | 73 | 70 | 10 | 6 | ------ | Ω d° a. |
| 8 | 31.1 | 20.6 | 93 | 57 | 3 | 4 | ------ | Ω a. d° ϟ p. |
| 9 | 30.9 | 23 | 93 | 77 | 5 | 8 | ------ | Ω² a. ϟ p. |
| 10 | 31.3 | 22.6 | 90 | 74 | 4 | 4 | ------ | Ω a. ϟ p. |
| 11 | 31.5 | 22.6 | 90 | 70 | 6 | 6 | ------ | Ω a. ⌈ϟ p. |
| 12 | 32.6 | 21.5 | 93 | 62 | 3 | 4 | ------ | Ω a. |
| 13 | 32.6 | 22.6 | 88 | 60 | 6 | 5 | 1.3 | Ω a. d² p. |
| 14 | 32.6 | 22 | 96 | 66 | 3 | 4 | ------ | Ω a. |
| 15 | 30.4 | 22.1 | 90 | 84 | 4 | 10 | 1.6 | Ω a. d p. |
| 16 | 28.7 | 22.7 | 92 | 81 | 10 | 10 | 16 | d a. p. ⌒² p. |
| 17 | 31 | 22.2 | 99 | 76 | 8 | 10 | ------ | Ω ≡ a. ϟ p. |
| 18 | 31.9 | 22.3 | 96 | 65 | 1 | 2 | ------ | Ω a. ϟ p. |
| 19 | 32 | 19.3 | 81 | 53 | 1 | 2 | ------ | Ω² a. |
| 20 | 29.7 | 18.5 | 81 | 68 | 0 | 4 | ------ | Ω² a. ⌒ p. |
| 21 | 31 | 21.4 | 91 | 66 | 3 | 4 | ------ | Ω a. |
| 22 | 32 | 19 | 81 | 56 | 3 | 4 | ------ | Ω a. |
| 23 | 31.5 | 20.1 | 82 | 66 | 1 | 2 | ------ | Ω a. |
| 24 | 31 | 23.5 | 93 | 58 | 3 | 3 | ------ | Ω a. ϟ p. |
| 25 | 29.3 | 22.6 | 85 | 70 | 6 | 10 | 23.6 | Ω a. ● p. |
| 26 | 28.5 | 23.4 | 96 | 73 | 10 | 7 | 11.4 | ● a. p. |
| 27 | 28.5 | 23.6 | 96 | 83 | 7 | 9 | .3 | d a. ϟ p. |
| 28 | 29 | 21.2 | 94 | 70 | 4 | 6 | ------ | Ω² a. |
| 29 | 29 | 21.5 | 91 | 80 | 8 | 9 | .3 | Ω a. d ψ² p. |
| 30 | 30.3 | 22.5 | 93 | 70 | 4 | 3 | .5 | Ω a. d p. |
| 31 | 30.5 | 22.2 | 95 | 67 | 4 | 5 | .5 | Ω ≡° a. d p. |
| Mean | 30.5 | 21.9 | 90.3 | 69.5 | 5.1 | 6.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 60.6 | |

### BUTUAN.

[$\phi$=8° 56′ N; $\lambda$=125° 32′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 28.6 | 22.1 | 97 | 71 | 9 | 5 | ------ | Ω² a. |
| 2 | 28.1 | 22 | 97 | 70 | 10 | 10 | ------ | Ω² ≡ a. ●° ⊤ p° p. |
| 3 | 28.1 | 22.7 | 96 | 86 | 8 | 10 | 65.5 | Ω ●° d° a. ●² p. |
| 4 | 27.7 | 21.7 | 95 | 84 | 10 | 5 | 2.3 | ●° a. ⊖ p. |
| 5 | 26.1 | 21.1 | 96 | 85 | 9 | 10 | 1.8 | d° a. ●° a. p. p p. |
| 6 | 27.1 | 22.8 | 97 | 86 | 10 | 10 | 1.8 | ●° d° a. p. ⊖ p. |
| 7 | 27 | 21.8 | 95 | 75 | 10 | 9 | .3 | Ω d ●° a. ψ p. |
| 8 | 29 | 21.1 | 96 | 72 | 8 | 5 | ------ | Ω a. ⊤ p. |
| 9 | 29.3 | 23.4 | 93 | 74 | 8 | 7 | .1 | Ω p° a. d° ⌒ p. |
| 10 | 29 | 22.5 | 97 | 69 | 3 | 7 | .5 | Ω a. ●° p. |
| 11 | 27.5 | 23 | 97 | 83 | 10 | 9 | 1.8 | Ω² p° a. ● ϟ p. |
| 12 | 28.4 | 22.7 | 93 | 91 | 7 | 7 | 10.2 | Ω d° a. ● p. |
| 13 | 28.5 | 21.9 | 96 | 75 | 5 | 10 | 20.6 | Ω a. ● p. |
| 14 | 27.8 | 21.7 | 97 | 80 | 5 | 4 | 1.1 | ≡ ●° a. d° p. |
| 15 | 27.8 | 22.4 | 96 | 77 | 6 | 10 | 13 | Ω² a. ●° d p. |
| 16 | 26.1 | 22.9 | 96 | 94 | 9 | 10 | 38.3 | Ω d° a. ● a. p. |
| 17 | 27.6 | 22.4 | 97 | 90 | 10 | 8 | 5.8 | ● a. p. |
| 18 | 28.7 | 22.1 | 96 | 66 | 7 | 3 | ------ | Ω a. ↙° p. |
| 19 | 29.1 | 19.1 | 95 | 63 | 3 | 3 | ------ | Ω a. ↙° p. |
| 20 | 27.6 | 21.2 | 86 | 83 | 10 | 10 | ------ | Ω a. d° a. p. ●° p. |
| 21 | 28.6 | 22.5 | 96 | 85 | 3 | 7 | 2.3 | Ω d° a. ● p. |
| 22 | 29.7 | 19.6 | 95 | 70 | 1 | 10 | ------ | Ω² a. d° p. |
| 23 | 28.7 | 21.5 | 95 | 64 | 3 | 5 | 5.8 | Ω a. ● p. |
| 24 | 29.1 | 23 | 93 | 64 | 4 | 4 | ------ | Ω p° a. ⌒ p. |
| 25 | 25.6 | 21.3 | 96 | 92 | 4 | 10 | 32.7 | Ω d° a. ● a. p. |
| 26 | 25.6 | 22.9 | 97 | 90 | 10 | 10 | 18 | Ω° ●° a. ● p. |
| 27 | 26.5 | 23.4 | 97 | 89 | 9 | 7 | 6.4 | ● a. d° p. |
| 28 | 26.5 | 20.7 | 96 | 88 | 4 | 8 | 8.7 | Ω² a. ● d p. |
| 29 | 27 | 22.6 | 97 | 83 | 10 | 8 | 6.6 | ● a. p. |
| 30 | 27.6 | 21.5 | 96 | 81 | 4 | 9 | 2.6 | Ω a. d° a. p. ● p. |
| 31 | 28.1 | 22.6 | 97 | 70 | 7 | 7 | 1.3 | Ω ≡ a. ●° p. |
| Mean | 27.8 | 22 | 95.6 | 79 | 6.9 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 247.5 | |

### DUMAGUETE.

[$\phi$=9° 18′ N; $\lambda$=123° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.3 | 24.5 | 80 | 61 | 10 | 4 | ------ | |
| 2 | 30.8 | 23.1 | 80 | 67 | 10 | 10 | ------ | ○° a. ○² d ψ° p. |
| 3 | 31.5 | 24.5 | 86 | 84 | 10 | 10 | 6.6 | ●° p. |
| 4 | 30.2 | 23.4 | 92 | 68 | 10 | 10 | ------ | ●° d° a. ⊕ ⊖ p. |
| 5 | 30.6 | 23.2 | 80 | 74 | 10 | 10 | ------ | Ω ○° a. |
| 6 | 30.3 | 24.4 | 83 | 68 | 10 | 10 | ------ | Ω° ψ ○° a. d² p. |
| 7 | 31.6 | 24 | 77 | 51 | 10 | 10 | ------ | ψ° ○° a. |
| 8 | 29.5 | 21.8 | 86 | 76 | 10 | 10 | ------ | ψ° Ω ○° a. |
| 9 | 30.8 | 22.8 | 82 | 71 | 10 | 10 | ------ | ψ° Ω° a. ○° p. |
| 10 | 31 | 23.6 | 78 | 71 | 10 | 5 | ------ | Ω a. |
| 11 | 30.7 | 23.4 | 79 | 71 | 10 | 6 | ------ | d a. ⌒° ϟ° p. |
| 12 | 29.6 | 24.6 | 80 | 78 | 10 | 10 | ------ | d a. |
| 13 | 30.8 | 25 | 74 | 66 | 10 | 10 | 4.3 | ⊖² a. ⌈ϟ ●° p. |
| 14 | 30.8 | 23.8 | 87 | 74 | 10 | 10 | ------ | ϟ p. |
| 15 | 30 | 24.6 | 85 | 74 | 10 | 10 | 24.1 | d ● p. |
| 16 | 30 | 24 | 87 | 77 | 10 | 10 | 1 | ● a. d° p. |
| 17 | 29 | 24.8 | 83 | 80 | 10 | 10 | 2 | ●° d° p. |
| 18 | 28.8 | 24.3 | 78 | 87 | 10 | 10 | 3.1 | Ω ●° a. |
| 19 | 29.2 | 24.7 | 74 | 68 | 10 | 5 | ------ | |
| 20 | 29.1 | 23.4 | 78 | 72 | 10 | 3 | 1.3 | Ω° ⌒² d° a. ●° p. |
| 21 | 29.7 | 24.4 | 77 | 65 | 10 | 10 | ------ | d² a. |
| 22 | 29.6 | 24.1 | 72 | 66 | 10 | 6 | ------ | |
| 23 | 29.3 | 23.8 | 87 | 60 | 10 | 6 | ------ | d² a. |
| 24 | 29.1 | 24.2 | 72 | 67 | 10 | 5 | ------ | |
| 25 | 30.2 | 24.3 | 77 | 71 | 8 | 10 | 6.6 | Ω° a. ●° p. |
| 26 | 28.9 | 22.8 | 87 | 73 | 10 | 10 | 1.3 | d² a. d p. |
| 27 | 28.2 | 22.6 | 79 | 74 | 10 | 10 | ------ | ⌒° a. |
| 28 | 29.9 | 22.8 | 73 | 67 | 10 | 6 | ------ | ϟ d p. |
| 29 | 28.5 | 22.9 | 78 | 79 | 10 | 10 | 2.3 | d a. p. ●° p. |
| 30 | 29.7 | 24 | 82 | 70 | 10 | 10 | 1 | Ω° a. d² p. |
| 31 | 30.5 | 23.8 | 80 | 70 | 10 | 9 | ------ | |
| Mean | 29.9 | 23.8 | 80.4 | 71 | 9.9 | 8.5 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 53.6 | |

### YAP (WESTERN CAROLINES).

[$\phi$=9° 29′ N; $\lambda$=138° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.8 | 24.7 | 96 | 85 | 8 | 6 | 23.1 | d ⌒° ● a. ψ° p. |
| 2 | 29.1 | 24.4 | 95 | 81 | 10 | 7 | 1.8 | ● ϟ a. ○° ψ² p° p. |
| 3 | 30.2 | 24.8 | 91 | 72 | 7 | 6 | 11.7 | ● p. |
| 4 | 29.8 | 24.4 | 97 | 78 | 9 | 8 | 10.9 | d ●° ○ a. ψ p. |
| 5 | 27.8 | 23.1 | 90 | 84 | 10 | 10 | 3. | d p a. ψ² ⊖² p. |
| 6 | 29 | 24.7 | 87 | 83 | 9 | 9 | 5.4 | ●° a. p. p ⊖ p. |
| 7 | 30 | 24.7 | 93 | 79 | 8 | 5 | 1.5 | ●° a. p. |
| 8 | 29.8 | 24.6 | 95 | 77 | 6 | 8 | 1.6 | ●° a. p. |
| 9 | 29.6 | 25.4 | 87 | 85 | 6 | 8 | 3.8 | ●° a. p. |
| 10 | 29.8 | 24.6 | 83 | 70 | 8 | 6 | ------ | ψ ○ a. |
| 11 | 30.2 | 25.4 | 72 | 69 | 6 | 6 | 4.8 | ψ ○ a. p p. |
| 12 | 29.6 | 23.7 | 83 | 69 | 4 | 4 | .8 | ψ ○° a. |
| 13 | 29.7 | 23.8 | 83 | 70 | 8 | 8 | .8 | ψ ○ ●° a. ○² ●° p. |
| 14 | 30 | 25.4 | 81 | 72 | 4 | 6 | 3.6 | ○ a. p. p° ●° p. |
| 15 | 29.2 | 24.6 | 87 | 72 | 9 | 4 | 3 | d° a. ●° a. p. ⌒ p. |
| 16 | 29.4 | 24.6 | 81 | 73 | 6 | 4 | 7.2 | p a. |
| 17 | 29.4 | 23.9 | 97 | 70 | 10 | 4 | .2 | ↙° ●° d° a. |
| 18 | 29.4 | 25.4 | 69? | 69 | 8 | 4 | .1 | ●° a. |
| 19 | 29.4 | 25.4 | 77 | 86 | 6 | 5 | 7.4 | ●° ⌒° a. d° a. p. |
| 20 | 28.8 | 24.2 | 98 | 73 | 8 | 3 | 3 | ● ⌒° a. |
| 21 | 29.3 | 25.4 | 81 | 76 | 6 | 4 | .8 | p a. d° p. |
| 22 | 29.3 | 24.4 | 87 | 76 | 7 | 6 | 1.5 | p a. p. ⌒ ●° p. |
| 23 | 29.3 | 24.1 | 81 | 74 | 6 | 8 | 1.5 | ●° a. p. |
| 24 | 29 | 24 | 95 | 96 | 9 | 8 | 4.3 | ● a. p. ↙° p. |
| 25 | 28.8 | 24.3 | 91 | 69 | 9 | 8 | 4.4 | ●° a. |
| 26 | 29.2 | 24.1 | 92 | 72 | 8 | 5 | 6.9 | ● a. p. ⊖ p. |
| 27 | 29.4 | 23.8 | 90 | 73 | 8 | 4 | 4.6 | ● a. p. |
| 28 | 29 | 23.4 | 92 | 66 | 8 | 3 | 1.5 | ●° a. |
| 29 | 28.8 | 25.4 | 82 | 81 | 4 | 6 | .3 | d° a. ●° p. |
| 30 | 29.4 | 26 | 78 | 67 | 6 | 8 | ------ | d° a. |
| 31 | ------ | ------ | 72 | ------ | 6 | ------ | ------ | |
| Mean | 29.4 | 24.6 | 86.5 | 75.6 | 7.3 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 119.5 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SURIGAO.

[$\phi$=9° 48′ N; $\lambda$=125° 29′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1.. | 30.3 | 22.9 | 96 | 71 | 5 | 4 | 6.1 | d a. ∞ p. |
| 2.. | 29.6 | 22.9 | 96 | 79 | 3 | 8 | 39.4 | ●² d° a. d ⊎ ●² p. |
| 3.. | 25.7 | 23.8 | 97 | 94 | 10 | 10 | 126.5 | ●² ⌈ϟ° a. p. |
| 4.. | 29.2 | 22.3 | 96 | 79 | 10 | 7 | 9.8 | ● a. d p. |
| 5.. | 25.8 | 23.1 | 97 | 93 | 9 | 10 | 18.1 | d² a. p. |
| 6.. | 27.1 | 23.3 | 96 | 86 | 9 | 9 | .3 | d° ◯° a. p. Ω p. |
| 7.. | 28.7 | 22.6 | 93 | 73 | 10 | 10 | ------ | Ω a. ◯° a. p. ⊎° p. |
| 8.. | 28.9 | 21.3 | 95 | 75 | 9 | 5 | ------ | Ω ◯° a. |
| 9.. | 30.1 | 23.1 | 96 | 81 | 4 | 8 | 4.1 | Ω° a. d² p. |
| 10.. | 30.1 | 22.9 | 97 | 80 | 5 | 3 | ------ | Ω a. |
| 11.. | 29.4 | 23.2 | 97 | 78 | 8 | 9 | 1 | Ω d a. d° ϟ° p. |
| 12.. | 29.6 | 22.5 | 97 | 80 | 7 | 8 | 24.6 | Ω d ●° a. d° ● p. |
| 13.. | 30.2 | 23.2 | 95 | 94 | 8 | 10 | 40.5 | d° a. p. ● p. |
| 14.. | 28.6 | 21.5 | 97 | 87 | 9 | 7 | 6.8 | Ω ≡ ●° a. ● d° p. |
| 15.. | 28.9 | 23.7 | 93 | 78 | 9 | 7 | 6.9 | d a. ∞° d° ● p. |
| 16.. | 30.2 | 24.3 | 88 | 76 | 9 | 9 | 9.5 | d° a. p. ∞° ● p. |
| 17.. | 29.4 | 23.5 | 97 | 77 | 10 | 6 | 3.3 | d° ●° a. |
| 18.. | 29.7 | 24 | 92 | 69 | 10 | 3 | .5 | d a. p. |
| 19.. | 29.8 | 23.9 | 81 | 77 | 2 | 6 | 1.8 | d° a. |
| 20.. | 30.4 | 22.8 | 89 | 76 | 10 | 8 | .8 | d a. d° ⌒° ● p. |
| 21.. | 30.4 | 24.6 | 88 | 72 | 4 | 4 | ------ | ∞ d° p. |
| 22.. | 30.3 | 25.1 | 81 | 77 | 2 | 10 | 1.3 | d² ● p. |
| 23.. | 29.5 | 23.7 | 88 | 70 | 6 | 3 | 3.9 | p a. d p. |
| 24.. | 29.6 | 24 | 81 | 73 | 4 | 5 | 1.8 | ⌒° p a. d° a. p. |
| 25.. | 28 | 23.5 | 88 | 82 | 10 | 10 | 5.1 | d° ● a. d ● p. |
| 26.. | 26.9 | 24.1 | 84 | 88 | 9 | 10 | 8.9 | ● a. p. d p. |
| 27.. | 27.7 | 24.2 | 88 | 87 | 10 | 10 | 1.3 | ● a. d² ⌽ p. |
| 28.. | 29.4 | 24.1 | 80 | 78 | 5 | 9 | 19.3 | d° ●° a. d° ● p. |
| 29.. | 28.7 | 22.9 | 97 | 88 | 10 | 10 | 22.8 | ●² d° a. d ● p. |
| 30.. | 28.6 | 22.7 | 93 | 93 | 7 | 10 | 23.6 | ●² a. d° a. p. ● p. |
| 31.. | 29.2 | 23.6 | 92 | 76 | 6 | 5 | 2.7 | d a. ∞ d° ● p. |
| Mean | 29 | 23.3 | 91.8 | 80.2 | 7.4 | 7.5 | ------ | |
| Total | | | | | | | 390.7 | |

### MAASIN.

[$\phi$=10° 08′ N; $\lambda$=124° 50′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1.. | 31.3 | 20.8 | 92 | 62 | 7 | 5 | ------ | |
| 2.. | 29.8 | 21 | 92 | 77 | 10 | 10 | ------ | d p. |
| 3.. | 28.7 | 22 | 93 | 84 | 10 | 10 | 73.4 | d ●² a. p. |
| 4.. | 29.6 | 22.5 | 95 | 75 | 10 | 10 | 27.4 | ● a. d a. p. ϟ p. |
| 5.. | 29.4 | 22.4 | 91 | 89 | 10 | 10 | 23.4 | p a. d a. p. ⊎² p. |
| 6.. | 29.5 | 22.5 | 93 | 86 | 10 | 10 | 23.4 | p a. |
| 7.. | 29.5 | 22.2 | 91 | 82 | 10 | 10 | ------ | d p. |
| 8.. | 29.5 | 22 | 91 | 81 | 10 | 8 | ------ | |
| 9.. | 29.8 | 22.1 | 96 | 82 | 10 | 10 | ------ | |
| 10.. | 29.6 | 22.2 | 93 | 81 | 10 | 5 | ------ | |
| 11.. | 30 | 22.2 | 87 | 81 | 10 | 10 | ------ | d a. p. |
| 12.. | 30.2 | 22.3 | 95 | 82 | 10 | 7 | ------ | |
| 13.. | 30.5 | 22.2 | 91 | 81 | 10 | 10 | 45 | d ●² p. |
| 14.. | 30.6 | 22 | 92 | 81 | 10 | 10 | ------ | |
| 15.. | 30.5 | 22.3 | 90 | 76 | 10 | 8 | 8.1 | ● p. |
| 16.. | 30.4 | 24.4 | 90 | 79 | 10 | 10 | 20.6 | ● p. |
| 17.. | 30.5 | 24.2? | 91 | 82 | 10 | 10 | 37.1 | d ● p. |
| 18.. | 30.5 | 23.5 | 95 | 90 | 10 | 10 | 19.6 | ● a. d a. p. |
| 19.. | 30.5 | 21.6 | 93 | 82 | 10 | 6 | ------ | |
| 20.. | 30.8 | 21.6 | 90 | 81 | 10 | 7 | ------ | |
| 21.. | 31 | 21.6 | 95 | 70 | 10 | 10 | ------ | |
| 22.. | 30.5 | 21.4 | 87 | 79 | 10 | 10 | ------ | d ⌒° p. |
| 23.. | 30.4 | 21.6 | 91 | 65 | 10 | 4 | ------ | d ⌒° a. |
| 24.. | 30.6 | 21.5? | 92 | 85 | 10 | 8 | ------ | d a. p. |
| 25.. | 30.5 | 23 | 91 | 78 | 10 | 10 | ------ | d a. p. T ⌒° p. |
| 26.. | 29.4 | 23 | 95 | 86 | 10 | 10 | ------ | d a. p. ⌒° p. |
| 27.. | 30.1 | 23 | 88 | 79 | 10 | 10 | ------ | ⌒² a. d a. p. |
| 28.. | 30.4 | 21.2 | 91 | 82 | 10 | 10 | 7.9 | ⊎ d p p. |
| 29.. | 30.5 | 21.3 | 95 | 90 | 10 | 10 | 10.2 | p a. d a. p. ⌒ p. |
| 30.. | 30.6 | 21.2 | 91 | 90 | 10 | 10 | 22.4 | d a. p. ⌒ ● p. |
| 31.. | 30.6 | 21.8 | 95 | 79 | 10 | 8 | ------ | d a. p. |
| Mean | 30.2 | 22.1 | 92 | 80.5 | 9.9 | 8.9 | ------ | |
| Total | | | | | | | 318.5 | |

### SAN JOSE BUENAVISTA.

[$\phi$=10° 44′ N; $\lambda$=121° 55′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 2 p. m. | Rain, 24 hrs. beginning 6 a. m. | Micellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1.. | 33.8 | 22.5 | 92 | 57 | 8 | 5 | ------ | d° a. |
| 2.. | 33.9 | 20.6 | 95 | 61 | 0 | 1 | ------ | Ω° a. |
| 3.. | 33.8 | 21 | 91 | 59 | 2 | 10 | ------ | Ω° a. ⌽ p. |
| 4.. | 34.5 | 22.5 | 87 | 58 | 10 | 10 | ------ | |
| 5.. | 33.4 | 20.7 | 88 | 60 | 5 | 9 | ------ | Ω² a. ⌽ p. |
| 6.. | 32.8 | 20.5 | 86 | 62 | 10 | 10 | ------ | Ω² a. d p. |
| 7.. | 30.8 | 21.6 | 92 | 58 | 8 | 10 | ------ | ◯ p. |
| 8.. | 33.5 | 20.7 | 92 | 62 | 5 | 3 | ------ | Ω² a. |
| 9.. | 33.8 | 20.5 | 86 | 64 | 2 | 7 | ------ | Ω² a. |
| 10.. | 32.9 | 20.7 | 84 | 66 | 8 | 2 | ------ | Ω² a. ϟ p. |
| 11.. | 33.7 | 22.4 | 91 | 65 | 10 | 9 | ------ | Ω² a. T d² p. |
| 12.. | 33.9 | 23 | 91 | 64 | 1 | 4 | ------ | |
| 13.. | 34.4 | 20.7 | 91 | 55 | 1 | 2 | ------ | Ω² a. d³ p. |
| 14.. | 34.3 | 22.4 | 89 | 58 | 2 | 4 | ------ | |
| 15.. | 32.3 | 22.4 | 91 | 67 | 10 | 10 | ------ | d² a. |
| 16.. | 34.9 | 23.8 | 83 | 62 | 10 | 10 | ------ | d² a. ϟ p. |
| 17.. | 34 | 20.5 | 91 | 68 | 10 | 9 | ------ | Ω² a. |
| 18.. | 35.7 | 22 | 83 | 53 | 9 | 5 | ------ | |
| 19.. | 34.9 | 20.2 | 86 | 55 | 0 | 1 | ------ | Ω° a. |
| 20.. | 33.8 | 22.6 | 83 | 66 | 10 | 4 | ------ | |
| 21.. | 33.9 | 18.5 | 90 | 52 | 1 | 1 | ------ | Ω² a. |
| 22.. | 33.7 | 18.5 | 90 | 56 | 8 | 1 | ------ | Ω² a. |
| 23.. | 34.8 | 21.4 | 87 | 48 | 5 | 9 | ------ | d a. |
| 24.. | 34.3 | 19.4 | 83 | 49 | 0 | 3 | ------ | |
| 25.. | 32.8 | 20.1 | 67 | 62 | 2 | 10 | ------ | |
| 26.. | 35.3 | 22.4 | 67 | 58 | 7 | 10 | ------ | ◡ p. |
| 27.. | 33.8 | 22 | 75 | 44 | 1 | 4 | ------ | |
| 28.. | 34.2 | 23 | 75 | 59 | 9 | 6 | ------ | |
| 29.. | 33.3 | 19 | 81 | 54 | 8 | 9 | ------ | |
| 30.. | 34.3 | 21.5 | 90 | 61 | 10 | 9 | ------ | |
| 31.. | 34.3 | 23.1 | 82 | 62 | 10 | 10 | ------ | d° a. |
| Mean | 33.9 | 21.3 | 85.8 | 58.9 | 5.9 | 6.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

### CUYO.

[$\phi$=10° 51′ N; $\lambda$=121° 01′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a. m. | Relative humidity. 2 p. m. | Cloudiness. 6 a. m. | Cloudiness. 6 p. m. | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10 | 0-10 | mm. | |
| 1.. | 30.2 | 25.8 | 82 | 70 | 8 | 4 | ------ | Ω a. |
| 2.. | 30.1 | 25.4 | 88 | 71 | 8 | 7 | ------ | Ω a. ⊕ p. |
| 3.. | 30.2 | 25.6 | 86 | 72 | 8 | 7 | ------ | Ω a. |
| 4.. | 29.9 | 25.8 | 87 | 70 | 8 | 8 | ------ | Ω a. ⊕ p. |
| 5.. | 30.3 | 25.5 | 89 | 72 | 8 | 7 | ------ | Ω a. |
| 6.. | 29.8 | 25.3 | 83 | 67 | 8 | 7 | ------ | Ω a. ⊎ p. |
| 7.. | 29.8 | 25.3 | 81 | 65 | 9 | 9 | ------ | Ω° a. |
| 8.. | 31.2 | 22.2 | 94 | 71 | 9 | 9 | ------ | Ω² a. |
| 9.. | 31.4 | 22.3 | 96 | 69 | 9 | 7 | ------ | Ω² ≡° a. |
| 10.. | 31.7 | 22.5 | 96 | 71 | 8 | 7 | ------ | Ω² ≡° a. |
| 11.. | 30.5 | 23.3 | 94 | 69 | 8 | 8 | ------ | Ω a. |
| 12.. | 31.5 | 24 | 95 | 74 | 7 | 7 | ------ | Ω a. |
| 13.. | 30.2 | 25.7 | 80 | 61 | 9 | 7 | ------ | Ω° a. |
| 14.. | 30 | 26 | 74 | 67 | 9 | 9 | ------ | Ω° a. |
| 15.. | 28.7 | 25.7 | 79 | 76 | 8 | 9 | ------ | Ω° a. |
| 16.. | 30 | 26 | 78 | 79 | 8 | 9 | ------ | Ω° a. d p. |
| 17.. | 30.1 | 24.8 | 89 | 72 | 9 | 8 | ------ | Ω² a. |
| 18.. | 30 | 25.5 | 85 | 61 | 8 | 8 | ------ | Ω a. |
| 19.. | 30.7 | 25.1 | 85 | 66 | 9 | 6 | ------ | Ω a. |
| 20.. | 30.2 | 25.5 | 90 | 76 | 8 | 8 | ------ | Ω a. |
| 21.. | 30.1 | 25.4 | 80 | 66 | 9 | 7 | ------ | Ω a. |
| 22.. | 30.2 | 25.4 | 81 | 67 | 8 | 7 | ------ | Ω a. |
| 23.. | 29.6 | 25.4 | 80 | 66 | 8 | 7 | ------ | Ω d° a. |
| 24.. | 29.7 | 25.1 | 76 | 64 | 9 | 7 | ------ | Ω a. |
| 25.. | 29.4 | 25.1 | 81 | 68 | 9 | 7 | ------ | Ω a. |
| 26.. | 29.2 | 25.4 | 72 | 65 | 9 | 8 | ------ | Ω a. |
| 27.. | 29.3 | 25.4 | 77 | 63 | 9 | 7 | ------ | Ω a. |
| 28.. | 29.5 | 25.2 | 79 | 67 | 8 | 8 | ------ | Ω° a. |
| 29.. | 29 | 25 | 77 | 67 | 8 | 7 | ------ | Ω° a. |
| 30.. | 29.2 | 25 | 82 | 69 | 8 | 7 | ------ | Ω° a. |
| 31.. | 29.2 | 25.1 | 78 | 72 | 8 | 5 | ------ | Ω° a. |
| Mean | 30 | 25 | 83.7 | 68.8 | 8.4 | 7.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | ------ | |

## METEOROLOGICAL DATA, ETC.—Continued.

### GUIUAN.

[$\phi$=11° 03′ N; $\lambda$=125° 43′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.2 | 23.8 | 81 | 71 | 4 | 7 | 0.3 | ●° a. p. |
| 2 | 29.8 | 24.4 | 88 | 82 | 2 | 8 | 16 | d ● a. p. p p. |
| 3 | 27 | 23.3 | 92 | 88 | 9 | 10 | 39.4 | ● a. p. |
| 4 | 30.4 | 22.9 | 95 | 74 | 9 | 2 | 2 | ●° ⌒² a. d a. p. |
| 5 | 28.7 | 24.3 | 85 | 92 | 8 | 10 | 23.9 | p° a. ● a. p. Φ² p. |
| 6 | 29.1 | 23.4 | 97 | 74 | 10 | 8 | ------ | |
| 7 | 27.4 | 24.3 | 81 | 80 | 9 | 10 | ------ | |
| 8 | 30.8 | 20.8 | 98 | 80 | 5 | 8 | 14.2 | p p. |
| 9 | 30 | 22.6 | 94 | 91 | 2 | 9 | 12.5 | ● a. p p. |
| 10 | 30.7 | 21 | 98 | 77 | 3 | 7 | ------ | Ω² a. ↯ ⌒ p. |
| 11 | 27.3 | 21.9 | 98 | 89 | 7 | 9 | 17.6 | Ω² ●° a. d° ● p. |
| 12 | 29.8 | 23.2 | 90 | 76 | 6 | 6 | .5 | ●° d p. |
| 13 | 28 | 23.4 | 77 | 82 | 8 | 9 | 11.1 | ● a. ●° p. |
| 14 | 29.2 | 24.4 | 88 | 82 | 8 | 9 | 12.2 | p a. ● p. |
| 15 | 29.7 | 23.7 | 86 | 81 | 8 | 9 | 5.6 | d° a. ● p. |
| 16 | 29.8 | 23.8 | 85 | 73 | 4 | 3 | 2.8 | ● a. |
| 17 | 29.8 | 23.1 | 92 | 74 | 7 | 4 | ------ | ●° a. ⊕ p. |
| 18 | 29.7 | 24.7 | 78 | 81 | 1 | 8 | 2.8 | ●° p. |
| 19 | 29.6 | 22.6 | 92 | 72 | 9 | 5 | 2 | ●° a. p. |
| 20 | 29.7 | 23.3 | 74 | 72 | 2 | 6 | .2 | p° p. |
| 21 | 29.8 | 24.8 | 83 | 69 | 6 | 7 | ------ | |
| 22 | 29.3 | 23.3 | 78 | 76 | 6 | 9 | 4.8 | ⌒² ● p. |
| 23 | 29.1 | 22.9 | 77 | 68 | 2 | 5 | .8 | |
| 24 | 29 | 24.1 | 75 | 73 | 4 | 1 | .5 | ●° a. p. |
| 25 | 28.8 | 23.3 | 81 | 71 | 3 | 7 | 2 | p d p. |
| 26 | 28.6 | 22.9 | 79 | 76 | 3 | 9 | .8 | p a. |
| 27 | 29 | 24 | 76 | 67 | 9 | 4 | .1 | ●° a. p. |
| 28 | 29.4 | 23.8 | 77 | 70 | 6 | 3 | 4.1 | |
| 29 | 26.7 | 22.4 | 97 | 89 | 10 | 10 | 17.5 | ● a. p. |
| 30 | 28.4 | 23.8 | 86 | 84 | 5 | 6 | 13. | ● a. p. |
| 31 | 29.4 | 22.7 | 92 | 77 | 8 | 4 | 6.3 | ● a. p. |
| Mean | 29.2 | 23.3 | 86.1 | 77.8 | 5.9 | 6.8 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 213 | |

### BORONGAN.

[$\phi$=11° 37′ N; $\lambda$=125° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.9 | 21.9 | 98 | 70 | 6 | 6 | 2.5 | ● ≡ a. ●° Ψ p. |
| 2 | 30 | 22.4 | 97 | 74 | 7 | 5 | 54.6 | ● ≡ a. ●° p. |
| 3 | 25.8 | 23.1 | 95 | 96 | 10 | 10 | 48.8 | ● a. p. |
| 4 | 30.2 | 22.8 | 93 | 73 | 10 | 5 | 20.9 | ● a. ●° p. |
| 5 | 29.3 | 22.7 | 97 | 83 | 5 | 10 | 15.3 | ≡ ●° a. Ψ ● p. |
| 6 | 29.2 | 22.9 | 97 | 70 | 6 | 5 | .3 | ● ≡ a. d Ψ° p. |
| 7 | 28.5 | 22.6 | 97 | 80 | 6 | 7 | ------ | Ω° ≡ a. Ψ p. |
| 8 | 31.3 | 21.1 | 97 | 73 | 2 | 5 | .3 | Ω ≡ a. Ψ° p. |
| 9 | 30 | 23.2 | 97 | 80 | 4 | 6 | ------ | ● ≡ a. |
| 10 | 30.3 | 21.7 | 97 | 78 | 2 | 6 | 1.3 | Ω ≡ a. ●° p. |
| 11 | 30.7 | 22.6 | 97 | 87 | 5 | 9 | 8.6 | ●° ≡ a. ● p. |
| 12 | 29.9 | 22.8 | 98 | 71 | 7 | 6 | 3 | ≡ a. ● a. p. |
| 13 | 28 | 23.1 | 83 | 76 | 8 | 8 | 5.8 | ● a. p. |
| 14 | 29 | 22.4 | 97 | 90 | 8 | 10 | 14.5 | ● a. p. |
| 15 | 29.3 | 24.5 | 86 | 80 | 10 | 7 | 2.8 | ● a. ●° p. |
| 16 | 30 | 24.4 | 83 | 83 | 5 | 7 | 3 | ●° a. ● p. |
| 17 | 30 | 24.9 | 88 | 69 | 7 | 7 | 6.4 | ● a. p. |
| 18 | 30 | 23.4 | 79 | 75 | 4 | 5 | 5.6 | ● p. |
| 19 | 29.4 | 22 | 95 | 78 | 9 | 5 | 8.8 | ● a. p. ⌒° p. |
| 20 | 30 | 22.8 | 78 | 69 | 6 | 5 | .3 | ●° p. |
| 21 | 29.8 | 23.6 | 80 | 72 | 8 | ·6 | .3 | ●° a. |
| 22 | 29.5 | 22.9 | 81 | 70 | 4 | 7 | 16.8 | Ω a. ● p. |
| 23 | 29.4 | 22.7 | 97 | 62 | 8 | 4 | .8 | ● a. ●° p. |
| 24 | 29.3 | 24 | 73 | 77 | 4 | 8 | 1.3 | ●° p. |
| 25 | 29 | 23 | 79 | 69 | 7 | 6 | ------ | |
| 26 | 28.9 | 23.5 | 77 | 71 | 4 | 9 | 2.6 | ● a. p. |
| 27 | 29 | 23.5 | 74 | 59 | 7 | 4 | 3.8 | ↙° a. ● p. |
| 28 | 29.2 | 23.2 | 80 | 69 | 8 | 6 | 2.5 | ●° p. |
| 29 | 26.7 | 22.7 | 83 | 91 | 10 | 10 | 38.8 | ● a. p. |
| 30 | 28.8 | 22 | 88 | 76 | 7 | 8 | 6.6 | ● p. |
| 31 | 29.3 | 23.5 | 87 | 78 | 7 | 6 | 2.5 | ⌒° a. ● a. p. |
| Mean | 29.3 | 23 | 88.8 | 75.8 | 6.5 | 6.7 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 278.8 | |

### MASBATE.

[$\phi$=12° 22′ N; $\lambda$=123° 36′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 30.5 | 23.6 | 97 | 78 | 6 | 8 | 1 | |
| 2 | 30.4 | 24.4 | 95 | 85 | 7 | 4 | ------ | |
| 3 | 28.8 | 25 | 91 | 94 | 9 | 10 | .3 | |
| 4 | 31 | 24.6 | 93 | 84 | 8 | 4 | ------ | |
| 5 | 30.6 | 23.8 | 95 | 77 | 8 | 8 | ------ | |
| 6 | 29 | 25 | 92 | 85 | 9 | 9 | ------ | |
| 7 | 27.6 | 24.6 | 90 | 93 | 10 | 10 | ------ | |
| 8 | 30.5 | 23.5 | 98 | 81 | 10 | 8 | ------ | |
| 9 | 31 | 22.5 | 100 | 80 | 8 | 8 | ------ | |
| 10 | 31 | 23 | 99 | 88 | 8 | 9 | 1.5 | |
| 11 | 31 | 23.4 | 100 | 89 | 6 | 7 | ------ | |
| 12 | 31 | 24 | 99 | 76 | 6 | 8 | 1 | |
| 13 | 30.2 | 23.6 | 97 | 77 | 9 | 7 | ------ | |
| 14 | 30.2 | 24 | 96 | 84 | 8 | 10 | 19.6 | |
| 15 | 29.8 | 22 | 96 | 82 | 9 | 9 | 2.3 | |
| 16 | 30.4 | 24 | 97 | 86 | 7 | 8 | ------ | |
| 17 | 30 | 23.8 | 93 | 80 | 9 | 9 | ------ | |
| 18 | 30.5 | 25 | 95 | 75 | 10 | 6 | ------ | |
| 19 | 30.5 | 23.8 | 98 | 81 | 9 | 9 | 14.7 | |
| 20 | 30 | 23.5 | 100 | 78 | 7 | 8 | ------ | |
| 21 | 29.6 | 22.6 | 97 | 76 | 7 | 7 | .3 | |
| 22 | 30 | 23.2 | 97 | 73 | 10 | 6 | 1 | |
| 23 | 30.4 | 23.5 | 92 | 73 | 8 | 7 | ------ | |
| 24 | 29.8 | 24.2 | 93 | 72 | 8 | 6 | .8 | |
| 25 | 30.8 | 23 | 98 | 75 | 8 | 7 | ------ | |
| 26 | 30.6 | 23.2 | 97 | 77 | 8 | 8 | .8 | |
| 27 | 30.5 | 23.5 | 90 | 77 | 8 | 6 | 1.3 | |
| 28 | 29.6 | 22.6 | 93 | 79 | 9 | 8 | ------ | |
| 29 | 29.2 | 23.8 | 92 | 80 | 9 | 9 | ------ | |
| 30 | 30.8 | 23.2 | 90 | 77 | 7 | 7 | ------ | |
| 31 | 31.2 | 22.8 | 95 | 81 | 8 | 6 | ------ | |
| Mean | 30.2 | 23.6 | 95.3 | 80.4 | 8.2 | 7.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 44.6 | |

### ROMBLON.

[$\phi$=12° 35′ N; $\lambda$=122° 16′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.8 | 22.9 | 96 | 62 | 10 | 1 | 7.1 | ● a. p. ⊤ p. |
| 2 | 28.8 | 23.4 | 91 | 84 | 10 | 9 | 10.9 | ● a. p. d p. |
| 3 | 31.1 | 23.4 | 96 | 78 | 10 | 5 | ------ | |
| 4 | 31.9 | 24.1 | 89 | 70 | 7 | 5 | ------ | |
| 5 | 32.2 | 22.9 | 97 | 72 | 8 | 7 | ------ | Ω a. Ψ p. |
| 6 | 30.8 | 22.5 | 90 | 83 | 8 | 10 | 1.8 | ● p p. |
| 7 | 29.2 | 21.8 | 91 | 73 | 10 | 10 | ------ | |
| 8 | 31.6 | 21.3 | 88 | 72 | 9 | 8 | ------ | |
| 9 | 32.6 | 23.3 | 90 | 62 | 8 | 5 | ------ | |
| 10 | 33.2 | 23.3 | 96 | 63 | 6 | 3 | ------ | |
| 11 | 31.2 | 22.4 | 97 | 76 | 5 | 5 | ------ | |
| 12 | 33 | 23.3 | 90 | 68 | 8 | 1 | .5 | |
| 13 | 32.3 | 23.3 | 87 | 68 | 10 | 3 | ------ | ● a. |
| 14 | 32.6 | 21.7 | 93 | 61 | 9 | 3 | .5 | |
| 15 | 30.4 | 23.2 | 90 | 81 | 10 | 8 | 4.3 | ● a. p. d°. p. |
| 16 | 29.2 | 24 | 89 | 88 | 10 | 10 | 1.6 | p a. d p |
| 17 | 31.8 | 24.2 | 88 | 72 | 10 | 7 | ------ | d a. |
| 18 | 32.1 | 24.6 | 83 | 70 | 9 | 5 | 7.1 | ●° a. |
| 19 | 31 | 23.8 | 85 | 77 | 10 | 9 | 1.5 | p° p. |
| 20 | 31.9 | 23.8 | 95 | 69 | 10 | 3 | 3.8 | d p° a. |
| 21 | 31.8 | 23.3 | 86 | 71 | 10 | 3 | ------ | |
| 22 | 32.8 | 23.4 | 83 | 64 | 10 | 2 | ------ | p° a. |
| 23 | 32.8 | 23.5 | 78 | 62 | 10 | 1 | ------ | |
| 24 | 31.2 | 23.4 | 76 | 70 | 10 | 6 | .6 | p° a. |
| 25 | 31.8 | 21.8 | 93 | 61 | 10 | 4 | ------ | p a. |
| 26 | 32.9 | 22.4 | 82 | 60 | 6 | 4 | ------ | |
| 27 | 32.8 | 23.8 | 78 | 64 | 10 | 7 | ------ | |
| 28 | 32.3 | 23.2 | 80 | 64 | 10 | 9 | ------ | |
| 29 | 31.6 | 22.4 | 89 | 60 | 10 | 4 | ------ | |
| 30 | 32.6 | 23.5 | 86 | 63 | 9 | 7 | ------ | |
| 31 | 32.6 | 22.4 | 89 | 60 | 9 | 2 | 3.6 | ● d p. |
| Mean | 31.7 | 23.1 | 88.4 | 69.3 | 9.1 | 5.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 43.3 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### GUBAT.

[$\phi$=12° 55′ N; $\lambda$=124° 08′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.3 | 23.8 | 95 | 82 | 9 | 10 | 4.3 | d ⌒ a. p. |
| 2 | 29.5 | 24 | 96 | 85 | 10 | 10 | 8.4 | d a. ●° p. |
| 3 | 28.2 | 23.6 | 97 | 86 | 10 | 10 | ------ | ●° a. |
| 4 | 30.5 | 24 | 94 | 83 | 10 | 7 | ------ | |
| 5 | 30.5 | 23.2 | 96 | 78 | 8 | 10 | ------ | ψ p. |
| 6 | 29.5 | 23.5 | 97 | 74 | 8 | 9 | ------ | d a. ψ p. |
| 7 | 26 | 22.2 | 90 | 96 | 10 | 10 | 4.1 | d a. p. ●° ψ p. |
| 8 | 31.5 | 22.6 | 91 | 76 | 10 | 10 | ------ | |
| 9 | 31.3 | 20.6 | 99 | 73 | 7 | 9 | ------ | |
| 10 | 30.6 | 22.7 | 97 | 78 | 7 | 9 | ------ | |
| 11 | 30.5 | 23.5 | 97 | 81 | 9 | 8 | ------ | |
| 12 | 30.3 | 25.5 | 95 | 83 | 7 | 10 | ------ | |
| 13 | 29.7 | 24.5 | 82 | 74 | 10 | 7 | ------ | |
| 14 | 30.9 | 23.6 | 94 | 85 | 10 | 8 | 28.7 | ● p. |
| 15 | 29.3 | 23.5 | 93 | 87 | 10 | 10 | 7.4 | ● a. ●° p. |
| 16 | 28.2 | 22.8 | 98 | 86 | 10 | 10 | 5.6 | ●° a. ● p. |
| 17 | 29.1 | 25.8 | 86 | 79 | 9 | 9 | ------ | |
| 18 | 29.2 | 25.4 | 94 | 81 | 8 | 8 | 2 | |
| 19 | 28.1 | 24.8 | 92 | 87 | 10 | 10 | 16.5 | d a. |
| 20 | 29.1 | 24.2 | 89 | 80 | 9 | 7 | ------ | ● a. |
| 21 | 28.6 | 23.5 | 88 | 80 | 10 | 8 | ------ | d a. |
| 22 | 29.3 | 24 | 94 | 75 | 9 | 8 | ------ | d a. |
| 23 | 28.8 | 24.7 | 81 | 74 | 10 | 6 | ------ | ● a. |
| 24 | 28.7 | 23.6 | 88 | 76 | 9 | 9 | 2.5 | ●° a. |
| 25 | 29 | 24.2 | 84 | 75 | 7 | 7 | ------ | |
| 26 | 28.2 | 25.2 | 82 | 76 | 6 | 10 | ------ | d p. |
| 27 | 28.2 | 24.5 | 84 | 77 | 9 | 10 | 2.5 | ● a. |
| 28 | 28 | 23.5 | 88 | 81 | 10 | 10 | ------ | d a. |
| 29 | 28 | 23.3 | 91 | 81 | 9 | 10 | ------ | |
| 30 | 28.3 | 23.2 | 92 | 79 | 10 | 9 | ------ | |
| 31 | 28.7 | 24 | 89 | 80 | 9 | 9 | 1.8 | p° p. |
| Mean | 29.2 | 23.8 | 91.4 | 80.3 | 9 | 8.9 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 83.8 | |

### LAOANG.

[$\phi$=12° 35′ N; $\lambda$=125° 01′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | ------ | 23.3 | 96 | 83 | 4 | 4 | 2 | ● a. d ●° p. |
| 2 | 29.4 | 23.2 | 97 | 85 | 4 | 8 | 6.6 | d a. ● a. p. |
| 3 | 30.8 | 23.7 | 93 | 94 | 9 | 9 | 8.4 | ● a. p. |
| 4 | 28.2 | 23.4 | 97 | 82 | 4 | 5 | 1 | ●° a. p. d ⌒° p. |
| 5 | 30.6 | 23.1 | 97 | 81 | 7 | 9 | 6.5 | p d a. d ψ ϖ p. |
| 6 | 31.3 | 24 | 97 | 70 | 9 | 7 | 5.6 | ● ◯ a. d ϖ ψ p. |
| 7 | 30.4 | 23.3 | 97 | 92 | 10 | 10 | 5.3 | ● a. ϖ ψ p. |
| 8 | ------ | 22.3 | 96 | 79 | 9 | 5 | ------ | |
| 9 | 31.8 | 22.8 | 97 | 79 | 3 | 7 | 25.1 | Ω2 a. ●2 Γ↯ p. |
| 10 | 32.2 | 22 | 99 | 79 | 3 | 6 | ------ | Ω2 a. d p. |
| 11 | 31.1 | 22.4 | 99 | 77 | 7 | 5 | ------ | Ω2 a. |
| 12 | 31.5 | 21.7 | 99 | 75 | 2 | 4 | ------ | Ω2 d a. ⌒ d p p. |
| 13 | 30.3 | 23.6 | 84 | 70 | 4 | 5 | .5 | d a. p. p p. |
| 14 | 30.3 | 21.7 | 98 | 94 | 7 | 10 | 15.5 | Ω a. ●° a. p. d p. |
| 15 | 28.7 | 22.2 | 91 | 82 | 8 | 8 | 6.3 | ● p a. p. |
| 16 | 29.7 | 23.6 | 97 | 68 | 8 | 3 | 2.5 | ⌒ ●° a. |
| 17 | 29.8 | 24.6 | 87 | 80 | 6 | 6 | .8 | p a. d p. |
| 18 | 29.8 | 23.4 | 87 | 75 | 7 | 4 | 2 | p ⌒ a. d p. |
| 19 | 30.4 | 21.9 | 98 | 90 | 4 | 8 | 8.3 | ⌒ a. ● a. p. |
| 20 | 29.4 | 22.1 | 98 | 74 | 2 | 4 | .2 | d p. |
| 21 | 30.2 | 22.8 | 95 | 73 | 6 | 4 | 1.5 | d ⌒ a. ●° a. p. |
| 22 | 29.8 | 23.4 | 84 | 70 | 2 | 4 | 1.5 | Ω a. ● ⌒ p. |
| 23 | 30 | 24.9 | 81 | 71 | 2 | 5 | .1 | Ω a. |
| 24 | 30.1 | 23.6 | 81 | 62 | 5 | 4 | .8 | d a. ●° p. |
| 25 | 30 | 23.1 | 82 | 68 | 4 | 4 | ------ | Ω a. d p. |
| 26 | 30.1 | ------ | 88 | 74 | 2 | 8 | ------ | Ω2 d a. |
| 27 | 30 | 24.7 | 79 | 65 | 2 | 3 | 1 | d a. p. |
| 28 | 30.1 | 23.3 | 91 | 75 | 4 | 4 | 1.8 | ●° a. ϖ p. |
| 29 | 29.9 | 22.7 | 95 | 78 | 9 | 9 | 5.8 | ●° a. p. ● p. |
| 30 | 29.7 | 22.3 | 96 | 71 | 3 | 5 | .5 | p p. |
| 31 | 29.9 | 24.1 | 90 | 72 | 6 | 8 | ------ | d a. |
| Mean | 30.2 | 23.1 | 92.5 | 77 | 5.2 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 109.6 | |

### VIRAC.

[$\phi$=13° 35′ N; $\lambda$=124° 14′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 31.7 | 22.5 | 85 | 80 | 4 | 10 | 1.3 | d a. p p. |
| 2 | 31.5 | 22.5 | 96 | 71 | 10 | 7 | 4.4 | ● a. p. ϖ p. |
| 3 | 31.3 | 22 | 91 | 71 | 5 | 10 | ------ | Ω a. ϖ p. |
| 4 | 31.7 | 21.5 | 97 | 68 | 10 | 5 | ------ | Ω2 ≡ d° ⌒ a. |
| 5 | 32 | 21.4 | 97 | 60 | 5 | 10 | ------ | Ω2 ≡ a. ψ p. |
| 6 | 31.3 | 21.8 | 95 | 58 | 10 | 10 | ------ | Ω ⌒ p° a. ψ2 p. |
| 7 | 26.7 | 22.5 | 80 | 89 | 10 | 10 | 25.1 | p ● a. d p. |
| 8 | 30.7 | 23 | 96 | 71 | 10 | 8 | ------ | ● a. |
| 9 | 31.1 | 24 | 96 | 70 | 5 | 6 | ------ | |
| 10 | 32 | 23.1 | 97 | 72 | 10 | 6 | ------ | Ω ≡ a. |
| 11 | 32.5 | 23.4 | 96 | 72 | 6 | 7 | 4.1 | Ω° a. d° ●° p. |
| 12 | 31.4 | 24.2 | 89 | 75 | 9 | 10 | .2 | ● a. d p. |
| 13 | 31.3 | 23 | 80 | 58 | 8 | 7 | 4.1 | d° ● p. |
| 14 | 30.8 | 21 | 95 | 72 | 2 | 10 | 3 | |
| 15 | 30 | 22.4 | 91 | 70 | 10 | 7 | 4 | ↙° ● p° a. d° p. |
| 16 | 29.4 | 24 | 85 | 83 | 10 | 10 | 8.9 | ⌒ a. ● a. p. |
| 17 | 31 | 23.5 | 87 | 67 | 9 | 7 | .3 | d a. |
| 18 | 31.2 | 23.3 | 83 | 64 | 7 | 6 | 4.6 | d p° a. ⌒2 ● p. |
| 19 | 30.2 | 23.5 | 90 | 76 | 7 | 9 | 9.9 | d ⌒2 ● a. p. |
| 20 | 31.1 | 22.6 | 88 | 65 | 10 | 5 | 1.5 | ● d2 ⌒ a. |
| 21 | 30.6 | 22 | 84? | 71 | 7 | 9 | 1.6 | ● d ⌒ a. |
| 22 | 31.2 | 21.8 | 87 | 69 | 8 | 3 | ------ | ● a. |
| 23 | 31 | 21.2 | 82? | 58 | 8 | 1 | 3.6 | Ω d ⌒ a. |
| 24 | 30 | 22 | 87 | 64 | 7 | 2 | 3.7 | ● a. |
| 25 | 30.5 | 22.5 | 80 | 55 | 9 | 4 | ------ | ● p° ⌒ a. |
| 26 | 30.6 | 22.4 | 81 | 56 | 3 | 6 | .5 | Ω a. |
| 27 | 30.3 | 23 | 87 | 62 | 10 | 7 | 2.5 | ●° a. |
| 28 | 30 | 22.2 | 82 | 70 | 6 | 10 | 3.7 | Ω ↙° ● a. p° p. |
| 29 | 31 | 20 | 97 | 64 | 7 | 10 | 1 | Ω2 a. ψ2 p, |
| 30 | 31.4 | 21.8 | 91 | 57 | 10 | 6 | .5 | p a. ⌒ a. p. d° p. |
| 31 | 30.8 | 20.5 | 95 | 78 | 6 | 8 | 3.7 | d° a. ● p° ⌒ p. |
| Mean | 30.8 | 22.4 | 89.3 | 68.3 | 7.7 | 7.3 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 92.2 | |

### SUMAY, GUAM (LADRONE ISLANDS).

[$\phi$=13° 24′ N; $\lambda$=144° 38′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0–10. | 0–10. | mm. | |
| 1 | 29.2 | 24.6 | 84 | 68 | 8 | 10 | 1.3 | |
| 2 | 29 | 24.6 | 84 | 71 | 10 | 10 | 1.3 | |
| 3 | 29 | 25 | 84 | 73 | 8 | 10 | ------ | |
| 4 | 27.4 | 24 | 84 | 84 | 10 | 10 | 6.3 | |
| 5 | 29 | 25 | 87 | 77 | 10 | 8 | 2.5 | |
| 6 | 29 | 25 | 84 | 73 | 10 | 8 | 3.8 | |
| 7 | 29.4 | 25.8 | 84 | 71 | 10 | 8 | ------ | |
| 8 | 28.4 | 25 | 84 | 70 | 10 | 7 | ------ | |
| 9 | 28.8 | 25 | 84 | 70 | 7 | 8 | 8.9 | |
| 10 | 29 | 25 | 84 | 70 | 10 | 5 | 1.3 | |
| 11 | 29 | 24 | 84 | 66 | 8 | 10 | 2.5 | |
| 12 | 28.6 | 23.2 | 91 | 73 | 10 | 10 | 6.4 | |
| 13 | 29 | 23.2 | 84 | 70 | 10 | 7 | 1.3 | |
| 14 | 29 | 25 | 84 | 69 | 6 | 10 | 2.5 | |
| 15 | 29 | 24.6 | 87 | 70 | 10 | 10 | 1.3 | |
| 16 | 29 | 25.4 | 84 | 73 | 10 | 6 | ------ | |
| 17 | 28 | 24.8 | 84 | 74 | 8 | 7 | 3.8 | |
| 18 | 29 | 25.2 | 84 | 76 | .5 | 8 | ------ | |
| 19 | 29 | 24.6 | 84 | 71 | 6 | 10 | ------ | |
| 20 | 29 | 25 | 84 | 70 | 6 | 6 | 2.5 | |
| 21 | 28.8 | 25 | 84 | 70 | 8 | 8 | 1.3 | |
| 22 | 29 | 24 | 88 | 70 | 10 | 7 | 1.3 | |
| 23 | 28 | 25 | 84 | 77 | 8 | 8 | ------ | |
| 24 | 28 | 24.4 | 84 | 74 | 7 | 7 | ------ | |
| 25 | 28.6 | 24.4 | 83 | 66 | 6 | 8 | ------ | |
| 26 | 29 | 23.4 | 83 | 70 | 6 | 10 | ------ | |
| 27 | 28 | 24 | 84 | 75 | 8 | 10 | ------ | |
| 28 | 28.4 | 23.8 | 83 | 70 | 6 | 10 | ------ | |
| 29 | 28 | 24 | 83 | 70 | 6 | 7 | ------ | |
| 30 | 28.4 | 24.2 | 83 | 70 | 7 | 8 | ------ | |
| 31 | 27 | 24 | 83 | 84 | 8 | 10 | 2.5 | |
| Mean | 28.6 | 24.5 | 84.4 | 72.1 | 8.1 | 8.4 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 50.8 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### NUEVA CACERES.

[$\phi$=13° 37′ N; $\lambda$=123° 11′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 30.7 | 20.5 | 95 | 64 | 7 | 7 | 0.8 |  |
| 2 | 29.6 | 20.2 | 93 | 77 | 9 | 9 | 1.1 | d a. |
| 3 | 30.5 | 21 | 95 | 83 | 9 | 9 | 1.4 | ●° p. |
| 4 | 31.1 | 20.5 | 97 | 64 | 8 | 7 | ------ |  |
| 5 | 31 | 18.6 | 98 | 63 | 6 | 8 | ------ |  |
| 6 | 29.5 | 19.9 | 95 | 69 | 9 | 8 | 5.8 | ● a. |
| 7 | 26 | 21.9 | 76 | 89 | 10 | 10 | 7.3 | ● a. d a. p. ●° p. |
| 8 | 29.1 | 21.9 | 94 | 77 | 10 | 10 | .1 | d a. |
| 9 | 32 | 20.6 | 96 | 60 | 5 | 7 | ------ |  |
| 10 | 32.5 | 20.7 | 98 | 57 | 4 | 6 | ------ |  |
| 11 | 33.5 | 20.3 | 98 | 62 | 10 | 8 | 5.8 | ≡° a. ●° p. |
| 12 | 31.9 | 22.5 | 97 | 54 | 9 | 7 | ------ | d ⌒ a. |
| 13 | 32.5 | 19.6 | 93 | 63 | 6 | 8 | ------ |  |
| 14 | 30.5 | 16.9 | 97 | 63 | 8 | 9 | 2.8 | ●° p. |
| 15 | 28.4 | 22.1 | 93 | 83 | 10 | 9 | 3.1 | ●° a. d a. p. |
| 16 | 29.5 | 19.3 | 95 | 89 | 8 | 9 | 14.2 | ● d p. |
| 17 | 31.7 | 19 | 98 | 56 | 5 | 6 | ------ |  |
| 18 | 32 | 18.5 | 96 | 68 | 3 | 7 | ------ |  |
| 19 | 30.7 | 19.5 | 96 | 74 | 3 | 9 | ------ |  |
| 20 | 32 | 21.2 | 93 | 48 | 9 | 6 | ------ |  |
| 21 | 32.3 | 18.1 | 94 | 54 | 8 | 7 | ------ |  |
| 22 | 32 | 16.8 | 98 | 55 | 4 | 5 | ------ |  |
| 23 | 32.2 | 19.5 | 93 | 57 | 3 | 6 | ------ |  |
| 24 | 30.4 | 20.2 | 79 | 68 | 5 | 6 | ------ |  |
| 25 | 32.2 | 18.2 | 92 | 64 | 6 | 7 | ------ |  |
| 26 | 32 | 15.9 | 94 | 62 | 8 | 8 | ------ |  |
| 27 | 31.6 | 18 | 94 | 54 | 6 | 7 | ------ |  |
| 28 | 33 | 16.5 | 96 | 60 | 7 | 8 | ------ |  |
| 29 | 31 | 16.2 | 98 | 52 | 9 | 8 | ------ |  |
| 30 | 30.9 | 17.4 | 96 | 65 | 4 | 8 | ------ |  |
| 31 | 31.3 | 16.2 | 98 | 64 | 5 | 8 | ------ | ≡° a. |
| Mean | 31.1 | 19.3 | 94.4 | 65.1 | 6.9 | 7.6 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 42.4 |  |

### BATANGAS.

[$\phi$=13° 45′ N; $\lambda$=121° 03′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 34 | 21.3 | 94 | 59 | 3 | 5 | ------ |  |
| 2 | 33.4 | 21.1 | 95 | 63 | 4 | 6 | .3 | d p. |
| 3 | 33.8 | 20.8 | 93 | 47 | 1 | 5 | ------ |  |
| 4 | 32.4 | 22 | 95 | 72 | 7 | 7 | 3.6 | ● p. |
| 5 | 33.3 | 20.7 | 95 | 50 | 4 | 5 | ------ | ○ p. |
| 6 | 31.8 | 19.4 | 91 | 68 | 6 | 4 | ------ |  |
| 7 | 30.5 | 20.3 | 91 | 62 | 5 | 7 | ------ |  |
| 8 | 29.4 | 21 | 85? | 69 | 9 | 9 | ------ |  |
| 9 | 31.5 | 23.2 | 93 | 71 | 7 | 6 | 5.8 | ● p. |
| 10 | 31.9 | 23 | 95 | 68 | 3 | 4 | ------ |  |
| 11 | 32.5 | 22.6 | 97 | 64 | 5 | 3 | 4.3 |  |
| 12 | 33 | 22.7 | 93 | 60 | 10 | 6 | ------ | d a. |
| 13 | 32.8 | 22.1 | 90 | 51 | 4 | 6 | ------ |  |
| 14 | 33.3 | 18 | 87 | 51 | 4 | 4 | ------ |  |
| 15 | 32.4 | 22.8 | 90 | 59 | 9 | 6 | 1.8 |  |
| 16 | 32.3 | 21.8 | 93 | 81 | 10 | 9 | 13.5 | d a. p. ● p. |
| 17 | 32.5 | 21.7 | 95 | 47 | 3 | 5 | ------ |  |
| 18 | 32.8 | 20.6 | 91 | 54 | 1 | 4 | ------ |  |
| 19 | 33.2 | 22 | 91 | 52 | 1 | 3 | ------ |  |
| 20 | 30.8 | 21.3 | 90 | 69 | 3 | 9 | ------ |  |
| 21 | 33.4 | 21.4 | 94 | 56 | 3 | 9 | ------ |  |
| 22 | 31.8 | 19.8 | 91 | 63 | 3 | 5 | ------ |  |
| 23 | 32.4 | 18.1 | 91 | 51 | 4 | 4 | ------ |  |
| 24 | 32.2 | 20.2 | 93 | 53 | 1 | 9 | ------ |  |
| 25 | 32.8 | 21.4 | 86 | 51 | 1 | 5 | ------ |  |
| 26 | 31.8 | 17.6 | 90 | 47 | 1 | 6 | ------ |  |
| 27 | 32 | 20 | 88 | 49 | 3 | 5 | ------ |  |
| 28 | 32.1 | 21 | 93 | 53 | 9 | 6 | 8.1 | ● a. |
| 29 | 32.2 | 19.5 | 91 | 48 | 5 | 6 | ------ |  |
| 30 | 33.6 | 18.7 | 91 | 47 | 4 | 6 | ------ |  |
| 31 | 32.4 | 19.9 | 91 | 52 | 1 | 3 | ------ |  |
| Mean | 32.4 | 20.8 | 91.7 | 57.6 | 4.3 | 5.7 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 37.4 |  |

### SILANG.

[$\phi$=14° 14′ N; $\lambda$=120° 58′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. |  |
| 1 | 29.6 | 17.7 | 98 | 72 | 7 | 6 | ------ | ≡ a. p° p. |
| 2 | 29 | 17.8 | 98 | 70 | 2 | 5 | ------ |  |
| 3 | 30 | 18.4 | 98 | 68 | 2 | 2 | ------ | Ω ≡ a. |
| 4 | 30.5 | 17 | 98 | 71 | 10 | 8 | ------ | ≡ d a. |
| 5 | 28.8 | 17.3 | 98 | 69 | 7 | 8 | ------ | ≡ a. p° p. |
| 6 | 29.3 | 17 | 97 | 68 | 10 | 9 | ------ | d a. |
| 7 | 28.6 | 17.6 | 98 | 70 | 5 | 7 | ------ | Ω ≡ a. |
| 8 | 29 | 17.1 | 98 | 68 | 10 | 9 | 2.5 | Ω a. ●° p. |
| 9 | 29.5 | 18.5 | 97 | 68 | 9 | 9 | 1.8 | ●° a. |
| 10 | 28.7 | 18.8 | 98 | 69 | 2 | 2 | ------ |  |
| 11 | 30 | 19.4 | 97 | 68 | 7 | 8 | ------ |  |
| 12 | 30.3 | 19 | 98 | 70 | 10 | 9 | 12.5 | Ω ≡ ● a. ●° ⌒ p. |
| 13 | 28.9 | 18.6 | 97 | 67 | 2 | 5 | ------ |  |
| 14 | 29.5 | 18.1 | 98 | 65 | 7 | 4 | ------ |  |
| 15 | 30.7 | 17.4 | 98 | 68 | 5 | 8 | ------ |  |
| 16 | 30.2 | 17.1 | 98 | 69 | 10 | 10 | 13.5 | ●° a. ● p. |
| 17 | 28.9 | 17.6 | 98 | 68 | 7 | 4 | ------ |  |
| 18 | 30 | 18.3 | 98 | 67 | 2 | 5 | ------ |  |
| 19 | 30.6 | 18.1 | 97 | 68 | 7 | 8 | 2.3 | ●° p. |
| 20 | 30.5 | 18.5 | 98 | 67 | 9 | 6 | ------ | Ω a. |
| 21 | 29.7 | 17.7 | 98 | 68 | 2 | 9 | 1 | d a. ●° p. |
| 22 | 29.8 | 18 | 97 | 66 | 2 | 5 | ------ |  |
| 23 | 30.4 | 18.4 | 97 | 65 | 2 | 2 | ------ |  |
| 24 | 30.1 | 17.6 | 98 | 65 | 7 | 6 | 3.6 | ●° p. |
| 25 | 29.6 | 17.1 | 98 | 67 | 3 | 7 | ------ | Ω a. |
| 26 | 29.9 | 17 | 98 | 70 | 2 | 6 | ------ | d p. |
| 27 | 30.3 | 17.2 | 97 | 70 | 4 | 8 | 4.6 | ●° p. |
| 28 | 29.8 | 17.6 | 98 | 69 | 10 | 8 | 2.5 | d a. ●° p. |
| 29 | 29 | 18.2 | 98 | 68 | 2 | 4 | ------ |  |
| 30 | 30.3 | 18.7 | 97 | 68 | 2 | 7 | ------ |  |
| 31 | 30.1 | 18 | 98 | 68 | 7 | 8 | ------ | Ω a. d a. p. |
| Mean | 29.7 | 17.9 | 97.7 | 68.2 | 5.6 | 6.5 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 44.3 |  |

### SANTA CRUZ, LAGUNA.

[$\phi$=14° 18′ N; $\lambda$=121° 25′ E]

| Day. | Temperature. |  | Relative humidity. |  | Cloudiness. |  | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
|  | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. |  |  |
|  | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | d° p. |
| 1 | 30.5 | 22 | 92 | 85 | 4 | 7 | 0.5 | d a. p. |
| 2 | 30.7 | 20.9 | 94 | 80 | 3 | 6 | 1 | ≡° Ω$^2$ a. d p. |
| 3 | 30.5 | 21.6 | 98 | 73 | 8 | 5 | .3 | d a. |
| 4 | 30 | 22.2 | 93 | 82 | 9 | 9 | .3 | ≡° Ω a. |
| 5 | 30.8 | 21.6 | 97 | 77 | 4 | 4 | ------ | d° a. d p. |
| 6 | 29.9 | 21.3 | 97 | 79 | 9 | 8 | .5 |  |
| 7 | 31.1 | 21.8 | 93 | 71 | 7 | 7 | ------ |  |
| 8 | 30.9 | 21.5 | 96 | 69 | 10 | 10 | ------ | d p. |
| 9 | 30.3 | 23.7 | 93 | 88 | 7 | 9 | 3.8 |  |
| 10 | 32 | 21 | 97 | 77 | 5 | 4 | ------ |  |
| 11 | 31.9 | 22.6 | 97 | 78 | 4 | 5 | ------ |  |
| 12 | 31.4 | 22.4 | 97 | 77 | 6 | 5 | ------ |  |
| 13 | 30.4 | 22 | 91 | 63 | 2 | 6 | ------ | ≡ Ω$^2$ a. |
| 14 | 30.4 | 19.3 | 99 | 69 | 3 | 7 | ------ | d p. |
| 15 | 29.1 | 21.3 | 84 | 67 | 10 | 7 | .3 | d a. ● p. |
| 16 | 29.9 | 21.1 | 88 | 78 | 9 | 9 | 44 | d p. |
| 17 | 30.7 | 21.6 | 96 | 63 | 2 | 5 | .3 |  |
| 18 | 29.7 | 19.9 | 95 | 60 | 4 | 4 | ------ | ≡° Ω$^2$ d° a. ⌒ p. |
| 19 | 29.8 | 21.7 | 97 | 70 | 4 | 7 | ------ | d p. |
| 20 | 29.4 | 21.7 | 96 | 88 | 5 | 9 | 3 | d° a. |
| 21 | 30.1 | 21.7 | 96 | 72 | 3 | 5 | .5 | ⌒ a. |
| 22 | 29.4 | 20.3 | 93 | 82 | 9 | 6 | ------ | ≡ Ω$^2$ a. |
| 23 | ------ | 18.5 | 98 | 65 | 3 | 7 | ------ | ≡° Ω$^2$ a. |
| 24 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ≡° Ω a. |
| 25 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | d$^2$ a. |
| 26 | 30.2 | ------ | ------ | 66 | ------ | 6 | .8 | ⌒ a. d° a. p. ⌒$^2$ p. |
| 27 | 29.8 | 19.8 | 95 | 67 | 5 | 4 | 3 | d$^2$ a. |
| 28 | 29.1 | 21.5 | 95 | 68 | 7 | 7 | ------ | ≡° Ω$^2$ a. |
| 29 | 29.7 | 18.9 | 98 | 62 | 6 | 6 | ------ | ≡° Ω$^2$ a. |
| 30 | 30 | 18.5 | 98 | 66 | 4 | 7 | ------ | Ω d a. |
| 31 | 29.5 | 18.2 | 97 | 69 | 4 | 6 | .3 |  |
| Mean | 30.3 | 21 | 95 | 72.8 | 5.6 | 6.4 | ------ |  |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 58.6 |  |

## METEOROLOGICAL DATA, ETC.—Continued.

### ANTIPOLO.

[$\phi$=14° 36′ N; $\lambda$=121° 10′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.6 | 18.8 | 91 | 49 | 4 | 4 | ------ | Ω a. |
| 2 | 33 | 19.8 | 85 | 53 | 3 | 4 | ------ | Ω° a. |
| 3 | 33.5 | 19.9 | 91 | 49 | 3 | 7 | ------ | Ω° a. |
| 4 | 32.2 | 20.3 | 89 | 64 | 4 | 8 | ------ | |
| 5 | 34 | 20.3 | 93 | 48 | 3 | 5 | ------ | Ω a. |
| 6 | 31.8 | 20.3 | 90 | 61 | 8 | 10 | ------ | p° a. |
| 7 | 32.3 | 19.6 | 92 | 57 | 10 | 8 | ------ | Ω² Φ a. |
| 8 | 28.4 | 21.8 | 89 | 78 | 10 | 10 | 0.5 | ⌈ʒ a. p° p. |
| 9 | 31.3 | 23.2 | 96 | 73 | 10 | 8 | .8 | ●° a. |
| 10 | 32.5 | 22.9 | 97 | 59 | 9 | 8 | ------ | Ω² a. |
| 11 | 32.6 | 22.4 | 98 | 66 | 10 | 7 | ------ | Ω a. ⌈ʒ p. |
| 12 | 33.6 | 22.2 | 90 | 55 | 9 | 6 | ------ | p° a. |
| 13 | 33.7 | 20.5 | 82 | 50 | 4 | 7 | ------ | Ω ⌈ʒ a. |
| 14 | 34 | 19.9 | 93 | 55 | 10 | 6 | ------ | |
| 15 | 32.3 | 20.3 | 74 | 55 | 5 | 7 | ------ | |
| 16 | 31.2 | 19.6 | 87 | 61 | 8 | 7 | 4.3 | p ● p. |
| 17 | 32.3 | 21.8 | 87 | 48 | 4 | 6 | ------ | |
| 18 | 33.3 | 20.2 | 83 | 50 | 3 | 3 | ------ | Ω a. |
| 19 | 32.5 | 20 | 86 | 68 | 10 | 9 | ------ | p° p. |
| 20 | 33 | 20.1 | 95 | 59 | 10 | 7 | ------ | Ω a. |
| 21 | 32.6 | 19.9 | 92 | 63 | 3 | 7 | ------ | Ω a. |
| 22 | 33.6 | 19.4 | 73 | 52 | 3 | 3 | ------ | Ω a. |
| 23 | 32.6 | 18.7 | 87 | 56 | 4 | 6 | ------ | Ω² ⌈ʒ a. |
| 24 | 32.5 | 20.6 | 89 | 61 | 4 | 2 | ------ | Ω a. |
| 25 | 33.9 | 19.9 | 95 | 61 | 9 | 2 | ------ | Ω² a. |
| 26 | 31.2 | 19.5 | 85 | 55 | 8 | 7 | ------ | Ω ⌒²⌈ʒ p a. |
| 27 | 33.2 | 20.8 | 81 | 42 | 4 | 4 | ------ | |
| 28 | 31.5 | 20.2 | 90 | 44 | 10 | 8 | ------ | Ω a. |
| 29 | 32.4 | 18.7 | 78 | 51 | 4 | 6 | ------ | |
| 30 | 33.7 | 18.8 | 83 | 43 | 5 | 6 | ------ | Ω a. |
| 31 | 31.3 | 18.6 | 90 | 80 | 6 | 9 | ------ | Ω a. p p. |
| Mean | 32.5 | 20.3 | 88.1 | 57 | 6.4 | 6.4 | ------ | |
| Total | | | | | | | 5.6 | |

### IBA.

[$\phi$=15° 20′ N; $\lambda$=119° 58′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.4 | 16.5 | 96 | 56 | 1 | 2 | ------ | Ω² ≡° a. |
| 2 | 31.6 | 17.5 | 94 | 60 | 1 | 2 | ------ | Ω a. ∞ p. |
| 3 | 31 | 17.8 | 96 | 63 | 2 | 3 | ------ | Ω ≡° a. ∞ p. |
| 4 | 31.5 | 18 | 95 | 62 | 4 | 2 | ------ | Ω ≡° a. |
| 5 | 31.9 | 20 | 95 | 64 | 3 | 5 | ------ | ≡° a. ⊥ p. |
| 6 | 31 | 19.3 | 95 | 65 | 4 | 10 | ------ | Ω° a. ◯² a. p. ⊥² p. |
| 7 | 30.4 | 19.8 | 96 | 72 | 10 | 10 | ------ | ≡° ◯ a. |
| 8 | 29.9 | 19.5 | 94 | 79 | 10 | 10 | 26.7 | d ● p. |
| 9 | 29.5 | 23.5 | 89 | 83 | 10 | 10 | 10.4 | ● a. p. ⌒ p. |
| 10 | 30.4 | 22.5 | 98 | 73 | 8 | 8 | ------ | ⌒ p. |
| 11 | 30.5 | 22.2 | 94 | 68 | 10 | 8 | ------ | |
| 12 | 33.1 | 21 | 96 | 63 | 4 | 8 | ------ | Ω ≡° a. |
| 13 | 31.4 | 19.9 | 87 | 55 | 2 | 4 | ------ | |
| 14 | 30.6 | 17.5 | 92 | 58 | 5 | 3 | ------ | Ω² a. |
| 15 | 30.5 | 18.8 | 94 | 62 | 4 | 7 | ------ | Ω a. |
| 16 | 31.1 | 18.9 | 91 | 62 | 3 | 9 | ------ | ⌒ d p. |
| 17 | 31.1 | 22.8 | 82 | 68 | 10 | 8 | ------ | ◯ p. |
| 18 | 33.1 | 20 | 77 | 62 | 2 | 2 | ------ | |
| 19 | 30.7 | 18 | 94 | 62 | 2 | 2 | ------ | Ω a. |
| 20 | 31.5 | 19.4 | 94 | 66 | 1 | 3 | ------ | Ω a. |
| 21 | 31 | 19.4 | 93 | 69 | 5 | 10 | ------ | d p. |
| 22 | 31.6 | 19.5 | 95 | 59 | 4 | 2 | ------ | |
| 23 | 31.1 | 17.8 | 86 | 58 | 4 | 5 | ------ | |
| 24 | 31.5 | 19.1 | 95 | 62 | 8 | 3 | ------ | |
| 25 | 30.2 | 18 | 87 | 56 | 5 | 3 | ------ | |
| 26 | 30.2 | 17.5 | 96 | 61 | 2 | 5 | ------ | Ω° ≡° ◯° a. |
| 27 | 30.5 | 17.3 | 91 | 62 | 4 | 6 | ------ | |
| 28 | 31 | 18.5 | 91 | 58 | 10 | 10 | ------ | ◯ a. |
| 29 | 30.8 | 19 | 83 | 56 | 6 | 9 | ------ | ◯ a. |
| 30 | 30.5 | 16.2 | 96 | 59 | 10 | 6 | ------ | Ω ≡° a. |
| 31 | 30.6 | 15.8 | 95 | 54 | 4 | 4 | ------ | Ω° ≡° a. |
| Mean | 31 | 19.1 | 92.2 | 63.1 | 5.1 | 5.8 | ------ | |
| Total | | | | | | | 37.1 | |

### TARLAC.

[$\phi$=15° 30′ N; $\lambda$=120° 35′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 33.5 | 16.5 | 94 | 47 | 0 | 1 | ------ | Ω a. |
| 2 | 34.4 | 18.2 | 83 | 49 | 0 | 2 | ------ | Ω a. |
| 3 | 34.2 | 19 | 83 | 46 | 0 | 2 | ------ | Ω a. |
| 4 | 34.1 | 18.5 | 95 | 48 | 3 | 2 | ------ | Ω ≡° a. |
| 5 | 34.4 | 21.4 | 86 | 46 | 4 | 3 | ------ | Ω a. |
| 6 | 34.4 | 20.5 | 90 | 51 | 7 | 8 | ------ | Ω a. |
| 7 | 34.2 | 20.3 | 92 | 48 | 4 | 7 | ------ | Ω a. |
| 8 | 28.4 | 21.2 | 95 | 92 | 10 | 10 | 26.1 | Ω ≡° a. ● d a. p. |
| 9 | 30 | 23.2 | 90 | 79 | 10 | 9 | 2 | ● a. d a. p. |
| 10 | 30.1 | 23.4 | 97 | 66 | 10 | 3 | ------ | Ω ≡ a. |
| 11 | 31.5 | 22.6 | 97 | 65 | 10 | 7 | ------ | Ω a. |
| 12 | 32 | 22.4 | 96 | 61 | 8 | 3 | ------ | Ω ≡° a. d° p. |
| 13 | 31.7 | 20.6 | 94 | 51 | 3 | 4 | ------ | Ω a. |
| 14 | 32.1 | 18.5 | 95 | 58 | 3 | 2 | ------ | Ω a. |
| 15 | 32.5 | 18.6 | 95 | 53 | 3 | 2 | ------ | Ω ≡° a. |
| 16 | 32 | 19.4 | 94 | 51 | 2 | 1 | ------ | Ω a. |
| 17 | 33.5 | 22.4 | 94 | 50 | 10 | 3 | ------ | |
| 18 | 32.5 | 18.9 | 90 | 46 | 3 | 3 | ------ | Ω a. |
| 19 | 33 | 19.5 | 91 | 51 | 10 | 1 | ------ | Ω a. |
| 20 | 33.3 | 20.6 | 91 | 50 | 3 | 4 | ------ | Ω a. |
| 21 | 32.5 | 20 | 92 | 73 | 7 | 9 | 1.3 | Ω d a. |
| 22 | 32.3 | 20 | 92 | 42 | 2 | 0 | ------ | Ω a. |
| 23 | 32.6 | 17.7 | 94 | 58 | 2 | 2 | ------ | Ω a. |
| 24 | 32.7 | 20.6 | 81 | 50 | 9 | 3 | ------ | Ω a. |
| 25 | 33.6 | 20.4 | 86 | 46 | 9 | 3 | ------ | Ω a. |
| 26 | 33.8 | 17.9 | 89 | 50 | 2 | 6 | ------ | Ω a. |
| 27 | 33 | 18.8? | 95 | 49 | 8 | 9 | ------ | Ω a. |
| 28 | 32.8 | 18.4 | 94 | 63 | 3 | 10 | ------ | Ω a. |
| 29 | 33.4 | 17.5 | 95 | 54 | 3 | 4 | ------ | Ω ≡° a. |
| 30 | 32.5 | 17 | 95 | 52 | 2 | 6 | ------ | Ω ≡° a. |
| 31 | 31.8 | 17.2 | 93 | 53 | 2 | 7 | ------ | Ω a. |
| Mean | 32.7 | 19.7 | 91.9 | 54.8 | 4.9 | 4.4 | ------ | |
| Total | | | | | | | 29.4 | |

### BALER.

[$\phi$=15° 40′ N; $\lambda$=121° 34′ E]

| Day. | Temperature. Maximum. | Temperature. Minimum. | Relative humidity. 6 a.m. | Relative humidity. 2 p.m. | Cloudiness. 6 a.m. | Cloudiness. 2 p.m. | Rain, 24 hrs. beginning 6 a.m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29.6 | 18.4 | 94 | 77 | 10 | 1 | ------ | Ω² a. |
| 2 | 30.4 | 20 | 94 | 73 | 10 | 1 | ------ | Ω° a. ⊥ p. |
| 3 | 29.1 | 20.7 | 95 | 76 | 10 | 10 | ------ | Ω ≡° a. ⊥ p. |
| 4 | 30.1 | 20.5 | 95 | 70 | 10 | 10 | 7.4 | Ω ≡° a. d ● p. |
| 5 | 29.8 | 22.7 | 97 | 79 | 10 | 2 | ------ | Ω ≡ a. ⊥ p. |
| 6 | 29.8 | 22.2 | 96 | 76 | 10 | 10 | 6.6 | Ω ≡° a. d ● p. |
| 7 | 28.6 | 20.1 | 96 | 70 | 10 | 10 | 2 | Ω ≡° a. ● p. |
| 8 | 25.2 | 22.8 | 85 | 91 | 10 | 10 | 20.1 | ● a. p. |
| 9 | 29.9 | 23 | 97 | 79 | 10 | 10 | 2.8 | d² a. ● T p. |
| 10 | 31.1 | 23 | 96 | 76 | 10 | 10 | ------ | Ω ≡° a. |
| 11 | 31 | 22.9 | 94 | 79 | 10 | 7 | 9.4 | Ω a. ● p. |
| 12 | 29.8 | 23.4 | 97 | 83 | 10 | 9 | 18.5 | ● a. |
| 13 | 29 | 23 | 92 | 76 | 10 | 9 | ------ | ● a. |
| 14 | 29.7 | 21.1 | 96 | 72 | 10 | 9 | ------ | Ω ≡° a. |
| 15 | 29.5 | 21.5 | 94 | 71 | 10 | 5 | ------ | |
| 16 | 29.7 | 21.3 | 95 | 75 | 10 | 10 | 11.7 | Ω ≡° d a. ● p. |
| 17 | 29.2 | 23.2 | 97 | 77 | 10 | 10 | 2.3 | Ω ≡ a. d ● p. |
| 18 | 28.8 | 20.7 | 97 | 77 | 10 | 2 | 5.1 | |
| 19 | 28.7 | 21.3 | 97 | 78 | 10 | 10 | 2 | ● ⌒ a. |
| 20 | 29.2 | 23.4 | 89 | 78 | 10 | 4 | 1 | d p. |
| 21 | 26.9 | 22.4 | 96 | 87 | 10 | 10 | 9.6 | ● a. p. |
| 22 | 29.1 | 22.7 | 91 | 69 | 10 | | ------ | Ω a. |
| 23 | 28.3 | 19.5 | 95 | 83 | 10 | 10 | 5.6 | d ● a. p. |
| 24 | 28.2 | 22.3 | 92 | 78 | 10 | 1 | 2.8 | ● a. d² p. |
| 25 | 29.5 | 20.7 | 90 | 70 | 10 | 7 | ------ | d a. |
| 26 | 29.4 | 19 | 97 | 70 | 10 | 1 | 1.8 | Ω² ≡ a. d p. |
| 27 | 28.3 | 22.6 | 97 | 74 | 10 | 10 | 3.6 | ● a. p. |
| 28 | 26.8 | 21 | 95 | 83 | 10 | 10 | ------ | Ω ≡° a. d a. p. |
| 29 | 29.3 | 17.9 | 96 | 58 | 4 | 5 | ------ | Ω² ≡° a. |
| 30 | 28.8 | 19.7 | 95 | 73 | 10 | 8 | ------ | Ω° ≡° ⌒ d a. |
| 31 | 28.3 | 18.5 | 97 | 74 | 9 | 9 | 2.3 | Ω² ≡ ● a. |
| Mean | 29.1 | 21.3 | 94.6 | 75.9 | 9.8 | 7.3 | ------ | |
| Total | | | | | | | 114.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SAN FERNANDO, UNION.

[$\phi$=16° 37′ N ; $\lambda$=120° 19′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 31 | 19.5 | 93 | 62 | 10 | 0 | ------ | Ω a. |
| 2 | 31 | 19.4 | 94 | 66 | 10 | 0 | ------ | Ω a. |
| 3 | 30.9 | 20.8 | 95 | 66 | 10 | 0 | ------ | Ω a. |
| 4 | 31.1 | 20 | 94 | 62 | 10 | 1 | ------ | Ω a. |
| 5 | 31 | 20.3 | 96 | 69 | 10 | 1 | ------ | Ω a. |
| 6 | 31.1 | 20.1 | 95 | 61 | 4 | 2 | ------ | Ω a. ⍦ p. |
| 7 | 30.5 | 21.4 | 93 | 67 | 10 | 10 | ------ | Ω ○ a. ⍦ p. |
| 8 | 28.2 | 21.4 | 89 | 92 | 10 | 10 | 30.2 | d$^{\circ}$ a. ● a. p. |
| 9 | 26.6 | 24.2 | 91 | 98 | 10 | 10 | 11.6 | ● a. p. |
| 10 | 27.5 | 23.6 | 94 | 85 | 10 | 10 | 1 | d a. p. |
| 11 | 27.9 | 23.1 | 89 | 78 | 10 | 2 | ------ | ↯$^{\circ}$ p. |
| 12 | 31.1 | 21.6 | 98 | 70 | 10 | 2 | ------ | Ω a. d$^{\circ}$ p. |
| 13 | 31.4 | 21.7 | 96 | 64 | 10 | 3 | ------ | Ω a. |
| 14 | 29.9 | 21 | 95 | 71 | 10 | 1 | ------ | $\Omega^{\circ}$ a. |
| 15 | 29.5 | 21.2? | 96 | 73 | 10 | 1 | ------ | Ω a. |
| 16 | 29.7 | 20.2 | 95 | 68 | 10 | 1 | ------ | Ω a. |
| 17 | 30.4 | 22.2 | 93 | 72 | 10 | 7 | ------ | |
| 18 | 30.2 | 20.5 | 96 | 65 | 10 | 0 | ------ | Ω a. |
| 19 | 30 | 19 | 96 | 60 | 10 | 0 | ------ | Ω a. |
| 20 | 29.9 | 20 | 96 | 70 | 10 | 0 | ------ | $\Omega^{\circ}$ a. |
| 21 | 30.2 | 20.1 | 95 | 74 | 10 | 10 | ------ | $\Omega^{\circ}$ a. |
| 22 | 30.9 | 21 | 95 | 70 | 10 | 0 | ------ | $\Omega^{\circ}$ a. |
| 23 | 29.7 | 18.4 | 95 | 67 | 10 | 0 | ------ | Ω a. |
| 24 | 30.4 | 19.8 | 95 | 70 | 10 | 0 | ------ | $\Omega^{\circ}$ a. |
| 25 | 30.1 | 19 | 95 | 71 | 10 | 0 | ------ | $\Omega^{\circ}$ a. |
| 26 | 29.7 | 20 | 89 | 67 | 10 | 4 | ------ | $\Omega^{\circ}$ a. |
| 27 | 30 | 19.2 | 97 | 63 | 10 | 2 | ------ | Ω a. |
| 28 | 29.7 | 19.1 | 95 | 72 | 10 | 3 | ------ | Ω ⊕ a. |
| 29 | 29.6 | 19.4 | 95 | 67 | 10 | 7 | ------ | Ω a. |
| 30 | 29.9 | 19.4 | 92 | 65 | 10 | 3 | ------ | |
| 31 | 29.9 | 18.9 | 92 | 65 | 10 | 6 | ------ | |
| Mean | 30 | 20.5 | 94.2 | 70 | 9.8 | 3.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 42.8 | |

### ECHAGUE.

[$\phi$=16° 41′ N ; $\lambda$=121° 39′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 32.1 | 17.2 | 100 | 49 | 2 | 1 | ------ | $\Omega^{2}$ $\equiv^{2}$ a. |
| 2 | 31.9 | 17.3 | 99 | 53 | 10 | 3 | ------ | $\Omega^{2}$ a. |
| 3 | 31.3 | 20 | 98 | 54 | 10 | 2 | ------ | $\Omega^{\circ}$ a. |
| 4 | 31 | 17 | 99 | 54 | 6 | 3 | ------ | $\Omega^{2}$ $\equiv^{2}$ a. d$^{\circ}$ p. |
| 5 | 32.8 | 22.2 | 98 | 51 | 8 | 1 | ------ | $\Omega^{\circ}$ a. |
| 6 | 28.8 | 20.8 | 98 | 76 | 10 | 10 | 0.3 | d a. d$^{2}$ p. |
| 7 | 28.6 | 20.9 | 98 | 66 | 7 | 10 | 3.3 | ⊤$^{2}$ p. |
| 8 | 26.7 | 22.4 | 97 | 91 | 10 | 10 | 21.9 | d$^{2}$ a. ● p. |
| 9 | 28 | 23.4 | 87 | 75 | 10 | 10 | 5.3 | d$^{2}$ a. |
| 10 | 32.1 | 25.3 | 82 | 67 | 7 | 9 | 7.1 | ⊕$^{2}$ a. p. ⌈↯$^{\circ}$ d$^{2}$ p. |
| 11 | 26.8 | 22.9 | 97 | 77 | 10 | 10 | 2.5 | d$^{2}$ a. d$^{\circ}$ p. |
| 12 | 33.6 | 21.9 | 100 | 71 | 10 | 6 | .3 | d$^{2}$ ⌒$^{2}$ a. d$^{\circ}$ p. |
| 13 | 33.2 | 21.3 | 99 | 58 | 10 | 3 | ------ | ⌒$^{\circ}$ a. |
| 14 | 30 | 17.3 | 99 | 56 | 3 | 3 | 2.8 | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 15 | 30.1 | 19 | 98 | 63 | 10 | 4 | .3 | d$^{2}$ a. |
| 16 | 30.1 | 20.1 | 97 | 68 | 10 | 8 | ------ | $\Omega^{2}$ ⊕$^{\circ}$ d$^{\circ}$ a. |
| 17 | 29.4 | 21.8 | 98 | 82 | 10 | 10 | ------ | d$^{\circ}$ a. |
| 18 | 31.4 | 18.8 | 99 | 52 | 3 | 3 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 19 | 30.8 | 18.1 | 98 | 60 | 10 | 2 | ------ | $\Omega^{2}$ a. |
| 20 | 32 | 19.9 | 97 | 53 | 8 | 2 | ------ | $\Omega^{2}$ ≡ a. |
| 21 | 27.3 | 20.6 | 98 | 92 | 10 | 10 | 4.8 | $\Omega^{\circ}$ d$^{\circ}$ a. d p. |
| 22 | 34.6 | 20.1 | 100 | 50 | 10 | 0 | ------ | $\Omega^{2}$ $\equiv^{2}$ a. ∞ p. |
| 23 | 28.5 | 17.3 | 99 | 68 | 4 | 10 | 1.3 | Ω ≡ a. ∞ d$^{\circ}$ p. |
| 24 | 32.1 | 21.3 | 100 | 54 | 10 | 3 | ------ | Ω $\equiv^{2}$ a. |
| 25 | 30 | 17.6 | 97 | 52 | 7 | 8 | ------ | Ω a. ∞ p. |
| 26 | 31.3 | 17.6 | 99 | 58 | 0 | 10 | ------ | ≡ a. ∞ p. |
| 27 | 29 | 19.9 | 99 | 63 | 9 | 9 | ------ | ∞ d$^{\circ}$ p. |
| 28 | 27.3 | 16 | 99 | 60 | 10 | 9 | ------ | $\Omega^{2}$ $\equiv^{2}$ a. d$^{\circ}$ p. |
| 29 | 28 | 17.6 | 96 | 65 | 10 | 9 | 7.6 | Ω $\equiv^{\circ}$ a. d$^{\circ}$ p. |
| 30 | 32.4 | 20.5 | 98 | 64 | 10 | 4 | ------ | d$^{\circ}$ a. |
| 31 | 30.6 | 18 | 99 | 54 | 9 | 4 | ------ | ∞ p. |
| Mean | 30.4 | 19.8 | 97.5 | 63.1 | 8.2 | 6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 57.5 | |

### CANDON.

[$\phi$=17° 12′ N ; $\lambda$=120° 26′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 29 | 20.5 | 87 | 70 | 0 | 2 | ------ | $\Omega^{2}$ a. |
| 2 | 29.5 | 20.2 | 82 | 68 | 0 | 1 | ------ | $\Omega^{2}$ a. |
| 3 | 30 | 20.9 | 87 | 67 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 4 | 29 | 21 | 86 | 70 | 1 | 1 | ------ | $\Omega^{2}$ a. |
| 5 | 29.5 | 21 | 87 | 62 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 6 | 29 | 22 | 83 | 73 | 4 | 3 | ------ | $\Omega^{2}$ a. |
| 7 | 29.1 | 22.5 | 82 | 64 | 10 | 10 | ------ | $\Omega^{2}$ a. |
| 8 | 26.6 | 23.2 | 77 | 90 | 9 | 10 | 40.6 | $\Omega^{2}$ d a. ● a. p. |
| 9 | 26.5 | 24.9 | 94 | 90 | 10 | 10 | 8.6 | ●$^{\circ}$ a. p. |
| 10 | 26.5 | 24 | 92 | 87 | 10 | 10 | ------ | d a. p. |
| 11 | 27.5 | 22.9 | 89 | 77 | 8 | 3 | ------ | Ω a. |
| 12 | 28.5 | 23 | 90 | 76 | 9 | 3 | ------ | Ω a. d p. |
| 13 | 28 | 23 | 88 | 78 | 2 | 8 | ------ | $\Omega^{2}$ a |
| 14 | 28 | 22.5 | 90 | 74 | 8 | 3 | ------ | $\Omega^{2}$ a. |
| 15 | 28.5 | 20 | 91 | 66 | 2 | 2 | ------ | $\Omega^{2}$ a. |
| 16 | 28.4 | 20 | 86 | 65 | 3 | 8 | ------ | $\Omega^{2}$ a. |
| 17 | 29 | 22.9 | 91 | 76 | 9 | 3 | ------ | Ω a. |
| 18 | 28.6 | 22 | 89 | 74 | 0 | 2 | ------ | $\Omega^{2}$ a. |
| 19 | 28.3 | 20.9 | 90 | 70 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 20 | 28.7 | 21.1 | 87 | 72 | 4 | 2 | ------ | $\Omega^{2}$ a. |
| 21 | 28.3 | 21.1 | 87 | 73 | 1 | 9 | ------ | $\Omega^{2}$ a. |
| 22 | 29.2 | 21 | 90 | 75 | 0 | 3 | ------ | $\Omega^{2}$ a. |
| 23 | 28.7 | 20.5 | 92 | 70 | 2 | 0 | ------ | $\Omega^{2}$ a. |
| 24 | 29 | 20.2 | 87 | 74 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 25 | 29.3 | 20.2 | 91 | 67 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 26 | 28.5 | 19.8 | 85 | 65 | 4 | 6 | ------ | $\Omega^{2}$ a. |
| 27 | 28.8 | 19.2 | 89 | 72 | 4 | 5 | ------ | $\Omega^{2}$ a. |
| 28 | 28.8 | 19.1 | 85 | 63 | 4 | 6 | ------ | $\Omega^{2}$ a. ⊤ p. |
| 29 | 28.8 | 19.1 | 86 | 71 | 9 | 8 | ------ | $\Omega^{2}$ a. ⍦ p. |
| 30 | 28.7 | 21 | 86 | 73 | 3 | 4 | ------ | $\Omega^{2}$ a. ⍦ p. |
| 31 | 28.9 | 21 | 89 | 68 | 3 | 4 | ------ | $\Omega^{2}$ a. |
| Mean | 28.6 | 21.3 | 87.6 | 72.3 | 3.8 | 4.1 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 49.2 | |

### LAOAG.

[$\phi$=18° 12′ N ; $\lambda$=120° 35′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | P. ct. | P. ct. | 0-10. | 0-10. | mm. | |
| 1 | 30.5 | 19.5 | 82 | 81 | 0 | 3 | ------ | $\Omega^{2}$ a. |
| 2 | 30.2 | 20 | 97 | 71 | 0 | 0 | ------ | $\Omega^{2}$ ≡ a. |
| 3 | 31.7 | 20.1 | 97 | 63 | 0 | 0 | ------ | $\Omega^{2}$ ≡ a. |
| 4 | 30.4 | 19.5 | 93 | 73 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 5 | 31.2 | 19.4 | 95 | 71 | 0 | 0 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 6 | 32.8 | 18.6 | 98 | 61 | 0 | 2 | ------ | $\Omega^{2}$ ≡ a. |
| 7 | 31.5 | 18.3 | 95 | 66 | 3 | 10 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 8 | 27.9 | 24 | 86 | 91 | 10 | 10 | 13.2 | ●$^{\circ}$ a. p. d p. |
| 9 | 27.3 | 23.7 | 94 | 86 | 10 | 10 | 23.3 | ● a. p. |
| 10 | 25.8 | 22.4 | 98 | 91 | 10 | 10 | 7.1 | ●$^{\circ}$ a. p. |
| 11 | 27 | 22.1 | 88 | 75 | 10 | 4 | 1 | d a. |
| 12 | 31.5 | 20.9 | 97 | 65 | 6 | 5 | ------ | |
| 13 | 31 | 21.3 | 96 | 75 | 0 | 1 | ------ | Ω a. |
| 14 | 31.8 | 21.5 | 96 | 67 | 0 | 0 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 15 | 32.5 | 19.2 | 96 | 63 | 0 | 0 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 16 | 32.5 | 17.6 | 91 | 63 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 17 | 31.8 | 20.7 | 96 | 63 | 0 | 0 | ------ | Ω a. |
| 18 | 29.8 | 21.5 | 95 | 77 | 0 | 1 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 19 | 30.2 | 19.8 | 90 | 68 | 0 | 0 | ------ | $\Omega^{2}$ a. |
| 20 | 30.9 | 20 | 97 | 65 | 0 | 0 | ------ | $\Omega^{2}$ ≡ a. |
| 21 | 30.7 | 19.5 | 96 | 68 | 0 | 1 | ------ | $\Omega^{2}$ $\equiv^{c}$ a. |
| 22 | 30.1 | 19.4 | 97 | 67 | 0 | 2 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 23 | 32.5 | 19.1 | 95 | 54 | 0 | 1 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 24 | 30.3 | 20.9 | 95 | 68 | 0 | 0 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 25 | 30.8 | 19.9 | 98 | 69 | 0 | 0 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 26 | 31 | 18.6 | 97 | 67 | 0 | 2 | ------ | $\Omega^{2}$ ≡ a. |
| 27 | 31.4 | 17.6 | 98 | 64 | 1 | 1 | ------ | $\Omega^{2}$ ≡ a. |
| 28 | 30.2 | 16.5 | 95 | 69 | 1 | 4 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 29 | 31 | 19.4 | 97 | 70 | 2 | 6 | ------ | $\Omega^{2}$ ≡ a. |
| 30 | 31.1 | 18.6 | 96 | 61 | 3 | 4 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| 31 | 29.9 | 20.5 | 96 | 68 | 0 | 3 | ------ | $\Omega^{2}$ $\equiv^{\circ}$ a. |
| Mean | 30.6 | 20 | 94.7 | 69.7 | 1.8 | 2.6 | ------ | |
| Total | ------ | ------ | ------ | ------ | ------ | ------ | 44.6 | |

## METEOROLOGICAL DATA, ETC.—Continued.

### SANTO DOMINGO.

[$\phi$=20° 28′ N; $\lambda$=121° 59′ E]

| Day. | Temperature. | | Relative humidity. | | Cloudiness. | | Rain, 24 hrs. beginning 6 a. m. | Miscellaneous. |
|---|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | 6 a. m. | 2 p. m. | 6 a. m. | 2 p. m. | | |
| | °C. | °C. | Pct. | Pct. | 0-10. | 0-10. | mm. | |
| 1 | 28.3 | 20.9 | 93 | 79 | 5 | 4 | ...... | v a. Ω$^{2}$ p. |
| 2 | 28.7 | 20 | 92 | 80 | 1 | 5 | ...... | Ω a. p. |
| 3 | 27.9 | 21.5 | 90 | 80 | 3 | 3 | ...... | Ω a. p. |
| 4 | 28 | 21 | 90 | 81 | 2 | 0 | ...... | v a. Ω p. |
| 5 | 28.4 | 20.5 | 91 | 78 | 2 | 3 | ...... | v a. Ω p. |
| 6 | 28.5 | 19.1 | 87 | 77 | 2 | 6 | ...... | v a. |
| 7 | 27 | 21.7 | 91 | 79 | 7 | 7 | 3.3 | ● p. |
| 8 | 26 | 21.9 | 96 | 95 | 10 | 10 | 73.4 | d ● a. p. |
| 9 | 26.7 | 22.8 | 93 | 81 | 10 | 10 | 62.8 | d ● p. |
| 10 | 24.3 | 21.2 | 96 | 97 | 10 | 10 | 24.1 | ↙° d ● a. p. |
| 11 | 23.4 | 18.7 | 93 | 90 | 10 | 10 | 12.7 | ↙° d ● a. p. |
| 12 | 24 | 17.3 | 83 | 71 | 10 | 10 | 7.8 | ↙° a. ●° d a. p. |
| 13 | 27.6 | 20.4 | 91 | 82 | 7 | 8 | 8.4 | d a. Ω p. |
| 14 | 23.1 | 19.4 | 87 | 79 | 10 | 10 | 33 | ↙° ● d a. p. |
| 15 | 23.7 | 17.5? | 88 | 86 | 10 | 10 | 13.4 | ● d a. p. |
| 16 | 26.4 | 19.6 | 83 | 79 | 7 | 5 | 80.8 | d p. |
| 17 | 24.8 | 20.3 | 95 | 93 | 10 | 10 | 70.9 | ●$^{2}$ ⌒ a. d ● a. p. |
| 18 | 27 | 21.4 | 95 | 85 | 5 | 4 | ...... | |
| 19 | 27.7 | 22.6 | 90 | 71 | 3 | 1 | .8 | Ω ●° p. |
| 20 | 26.7 | 20.1 | 88 | 82 | 2 | 3 | 3.5 | d° ● p. |
| 21 | 27.5 | 21 | 91 | 80 | 6 | 4 | .2 | ●° ⌒ a. |
| 22 | 27.9 | 22.1 | 92 | 72 | 7 | 6 | .5 | ⌒ ● a. Ω p. |
| 23 | 26.9 | 19.4 | 90 | 78 | 4 | 6 | 3.7 | d ●° p. |
| 24 | 27.6 | 22 | 88 | 80 | 8 | 7 | 7.3 | ●° a. ● p. |
| 25 | 28.3 | 22 | 89 | 74 | 6 | 0 | ...... | Ω p. |
| 26 | 28.3 | 22 | 88 | 75 | 4 | 3 | ...... | Ω p. |
| 27 | 27.8 | 20.6 | 86 | 75 | 6 | 4 | ...... | ●° p. |
| 28 | 28.3 | 20.8 | 83 | 68 | 3 | 8 | 7.4 | ● p. |
| 29 | 24.1 | 20.4 | 85 | 84 | 10 | 7 | 13.5 | ●° a. d a. p. ● p. |
| 30 | 24.4 | 20 | 88 | 83 | 10 | 10 | 16.8 | ⌒$^{2}$ a. d a. p. ●° p. |
| 31 | 26.4 | 20.3 | 87 | 83 | 10 | 5 | 4.8 | ●° d° ⌒ a. ⌒° p. |
| Mean | 26.6 | 20.6 | 89.6 | 80.5 | 6.5 | 6.1 | ...... | |
| Total | ...... | ...... | | | ...... | ...... | 449.1 | |

# SEISMOLOGICAL BULLETIN FOR DECEMBER, 1911.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
*Assistant Director of the Weather Bureau.*

## EARTHQUAKES FELT IN THE PHILIPPINES.[1]

2, $2^h\ 34^m$. **Aparri** (NE of Luzon). Oscillatory earthquake. Direction E–W, intensity III, duration 6 seconds.

4, $16^h\ 56^m$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction NW–SE, intensity II–III, duration 8 seconds.

5, $3^h\ 30^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

5, $12^h\ 26^m\ 4^s$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction NE–SW, intensity IV–V, duration 12 seconds.

6, $3^h\ 45^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

8, $3^h\ 0^m$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction N–S, intensity III, duration 3 seconds.

8, $21^h\ 24^m$. **Agusan Valley.** Earthquake of small intensity but great extent. We have no data concerning the epicentral region, but only from the stations at Butuan and Davao, of which the former is 80 kilometers north, the latter 120 kilometers south of the central portion of the Agusan Valley. At Butuan were observed oscillatory movements of force III in the direction SE–NW; at Davao, the movements were both, trepidatory and oscillatory, of intensity IV and varying direction. Hence it would seem that the epicenter must be sought in the southern or southeastern part of the valley. The disturbance cannot, however, have been very violent even there, since neither the Manila seismographs nor those in Formosa registered its occurrence.

9, $9^h\ 20^m$. **Davao** (SE of Mindanao). Earthquake of force IV–V, which was felt likewise on Sarangani Island, where it was of intensity III, and at Butuan, intensity II, though these stations are separated from each other by a distance of more than 370 kilometers. The epicenter lay probably in the southeasternmost part of Mindanao, to the east of Davao Gulf. The force of this earthquake does not appear to have been proportionate to the extent of its perceptibility, since even the seismographs of Manila failed to register the disturbance.

10, $7^h\ 32^m\ 24^s$.* **Aparri** (NE of Luzon). Oscillatory earthquake. Direction NNE–SSW, intensity IV, duration 5 seconds.

12, $1^h\ 15^m$. **Cuyo Island** (Western Visayas). Oscillatory earthquake. Direction WSW–ENE, intensity IV, duration 3 seconds.

16, $5^h\ 4^m\ 15^s$.* **Northeastern Luzon.** Earthquake felt throughout Cagayan Province. At Aparri, oscillations of intensity V and a N–S direction were felt for about 20 seconds; the same kind of movements was observed at Tuguegarao during 15 seconds, but their force was only III.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

17, 22$^h$ 5$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity IV.

18, 20$^h$ 4$^m$ 38$^s$.* **Northern Luzon.** Earthquake of force V, felt in the Provinces of Ilocos Norte and Sur, the northern part of the Mountain Province, and in Cagayan Province. The epicenter appears to have been situated about 450 kilometers north of Manila, to the south of the Babuyanes group of islands (121.5° E; 18.7° N).

20, 5$^h$ 25$^m$. **Butuan** (N of Mindanao). Trepidatory and oscillatory earthquake. Direction SSE–NNW, intensity IV, duration 15 seconds.

21, 3$^h$ 35$^m$. **Butuan** (N of Mindanao). Trepidatory earthquake with slight oscillations in the direction SW–NE, lasting some 10 seconds. Four or five different vertical shocks of intensity V could be distinguished.

25, 23$^h$ 42$^m$. **Sarangani** (S of Mindanao). Earthquake of intensity III.

30, 8$^h$ 5$^m$. **Palanoc** (Masbate). Earthquake of intensity III.

30, 23$^h$ 4$^m$ 42$^s$.* **Laoag** (NW of Luzon). Earthquake of intensity IV, lasting 5 seconds.

## RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight =0$^h$.)

| No. | Date. | Character. | Instrument and component. | Beginning. First preliminary tremors. | Beginning. Second preliminary tremors. | Beginning. Principal portion. | Maximum range of motion. Hour. | Maximum range of motion. Amplitude (2a.) | Maximum range of motion. Period. | End. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | *h. m. s.* | *h. m. s.* | *h. m. s.* | *h. m. s.* | *mm.* | *s.* | *h. m.* | |
| 294 | 5 | $I_v$ | V. | 12 26 04 | | 12 26 50 | 12 27 05 | 0.02 | 2.4 | 12 29 | Vertical Component 0.02 mm. Earthquake, IV-V at Aparri (NE of Luzon). |
| 295 | 6 | $I_d$ | V. | 19 01 06 | | 19 01 17 | 19 01 19 | .16 | 2.4 | 19 04 | V. C. 0.06 mm. |
| 296 | 7 | $I_d$ | V. | | | 0 26 04 | 0 26 09 | .03 | 2.4 | 0 28 | V. C. 0.01 mm. |
| 297 | 10 | $I_d$ | V. | 5 07 33 | | 5 07 47 | 5 08 11 | .01 | 2.4 | 5 14 | V. C. 0.02 mm. |
| | | | W. N | 5 07 32 | | 5 07 48 | 5 08 12 | .01 | 2.4 | 5 14 | |
| 298 | 10 | $I_d$ | V. | 7 32 24 | | 7 33 17 | 7 33 38 | .08 | 2.4 | 7 38 | V. C. 0.03 mm., Eqke. IV at Aparri (NE of Luzon). |
| 299 | 10 | I | H. WSW | 18 05 00 | | | | | | 18 25 | |
| | | | W. N | 18 05 00 | | | | | | 18 28 | |
| 300 | 11 | $I_u$ | V. | 19 07 06 | 19 18 31 | 19 30 15 | 19 36 37 | .03 | 12.8 | | |
| | | | H. NNW | 19 07 08 | 19 18 47 | 19 30 28 | 19 36 42 | .18 | 10.8 | | |
| | | | H. WSW | 19 07 08 | 19 18 50 | 19 31 35 | 19 36 37 | .22 | 10.2 | | |
| | | | W. N | 19 07 10 | 19 18 39 | 19 30 25 | 19 36 29 | .16 | 10.8 | | |
| | | | W. E | 19 07 10 | 19 18 28 | 19 30 02 | 19 34 47 | .06 | 8.8 | | |
| 301 | 11 | $I_r$ | V. | 19 46 27 | | | | | | 20 38 | V. C. 0.01 mm. |
| | | | H. NNW | 19 46 27 | | | | | | 20 17 | |
| | | | H. WSW | 19 46 27 | | | | | | 20 19 | |
| | | | W. N | 19 46 26 | | | | | | 20 27 | |
| | | | W. E | 19 46 26 | | | | | | 20 25 | |
| 302 | 12 | $I_v$ | V. | 0 05 01 | | 0 05 31 | 0 05 36 | .04 | 2.4 | 0 07 | V. C. 0.02 mm. |
| 303 | 13 | $I_r$ | V. | 17 05 09 | | | | | | 17 33 | |
| | | | H. NNW | 17 05 08 | | | | | | 17 31 | |
| | | | H. WSW | 17 05 08 | | | | | | 17 33 | |
| | | | W. N | 17 05 02 | | | | | | 17 .34 | |
| 304 | 13 | $I_d$ | V. | 20 30 20 | | 20 30 35 | 20 30 39 | .02 | 2.4 | 20 33 | V. C. 0.01 mm. |
| 305 | 14 | $I_r$ | W. E | 6 37 44 | | | | | | 7 21 | |
| 306 | 16 | $II_v$ | V. | 5 04 15 | | 5 05 07 | 5 05 32 | .80 | 2.4 | 5 15 | V. C. 0.05 mm. Northeastern Luzon. |
| | | | W. E | 5 04 13 | | 5 05 04 | 5 06 44 | .37 | 5 | 5 18 | |
| 307 | 17 | $I_u$ | H. WSW | 3 36 37? | 3 52 17? | 4 08 53? | 4 35 26 | .05 | 17 | 5 20 | Eqke. in Mexico. |
| | | | W E | 3 36 00? | 3 51 44? | 4 07 00? | 4 35 20 | .01 | 16.2 | 5 25 | |
| 308 | 18 | $I_v$ | V. | 20 04 38 | | 20 05 28 | 20 05 49 | .04 | 2.4 | 20 09 | V. C. 0.02 mm. Northern Luzon. |
| 309 | 19 | $I_d$ | V. | 22 56 49 | | 22 56 59 | 22 57 02 | .05 | 2.4 | 22 59 | V. C. 0.03 mm. |
| 310 | 20 | $I_u$ | W. N | 14 00 48 | 14 10 08 | 14 17 02 | 14 21 02 | .02 | 14.8 | 15 17 | |
| 311 | 22 | $I_d$ | W. N | 11 40 07 | | 11 40 34 | 11 41 20 | .01 | 3.2 | 11 45 | |
| 312 | 23 | $I_d$ | W. N | | | 7 56 00 | 7 56 42 | .01 | 3.6 | 7 58 | |
| 313 | 30 | $I_r$ | V. | 17 11 14 | | 17 15 34 | 17 16 47 | .01 | 7.2 | 17 54 | |
| | | | W. N | 17 11 14 | | 17 15 34 | 17 16 48 | .01 | 7.2 | 17 45 | |
| | | | W. E | 17 11 14 | | 17 15 56 | 17 18 40 | .01 | 8 | 17 47 | |
| 314 | 30 | $I_d$ | V. | 23 04 42 | | 23 05 19 | 23 05 57 | .06 | 2.4 | 23 09 | V. C. 0.02 mm. Eqke., IV at Laoag (NW of Luzon). |
| 315 | 31 | $II_r$ | V. | 14 12 44 | 14 17 10 | 14 20 59 | 14 22 05 | .03 | 12.2 | 15 26 | V. C. 0.02 mm. |
| | | | H. NNW | 14 12 44 | 14 17 12 | 14 20 59 | 14 22 18 | .19 | 10 | 15 22 | |
| | | | H. WSW | 14 12 44 | 14 17 08 | 14 20 56 | 14 22 07 | .43 | 10.8 | 15 24 | |
| | | | W. N | 14 12 40 | 14 17 08 | 14 20 48 | 14 22 11 | .04 | 9.2 | 15 31 | |
| | | | W. E | 14 12 40 | 14 17 12 | 14 20 57 | 14 22 00 | .12 | 11 | 15 42 | |

*Instrumental Constants.*—Vicentini microseismograph (V.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record, 50 times.

Horizontal Pendulums (H.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation: NNW–SSE pendulum, T= 7.8 seconds; WSW–ENE pendulum, T= 8.7 seconds. Magnification of the record: NNW–SSE, 15 times; WSW-ENE, 15 times.

These seismographs have no damping arrangement.

*Foundation and location.*—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above sea level.

*Geological structure.*—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

Wiechert seismograph (W.); 1,000 kilograms; N=N–S component; E=E–W component; period 7 seconds; magnification 98; damping 4:1; 2.40 meters above sea level.

## TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

2, $2^{h}$ $34^{m}$. **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección E–W, intensidad III, duración 6 segundos.

4, $16^{h}$ $56^{m}$. **Butuan** (N de Mindanao). Temblor oscilatorio. Dirección NW–SE, intensidad II–III, duración 8 segundos.

5, $3^{h}$ $30^{m}$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

5, $12^{h}$ $26^{m}$ $4^{s}$.* **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección NE–SW, intensidad IV–V, duración 12 segundos.

6, $3^{h}$ $45^{m}$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

8, $3^{h}$ $0^{m}$. **Butuan** (N de Mindanao). Temblor oscilatorio. Dirección S–N, intensidad III, duración 3 segundos.

8, $21^{h}$ $24^{m}$. **Valle del Agusan.** Temblor de tierra de poca intensidad y de mucha extensión. No hay datos del epicentro, sino de las estaciones de Butuan y de Davao que están respectivamente a 80 kilómetros al N y 120 kilómetros al S del centro del valle agusano. En Butuan se observaron movimientos oscilatorios de intensidad III y dirección SE–NW; en Davao, movimientos susultorios y oscilatorios en varias direcciones y de intensidad IV: por consiguiente el epicentro parece deber colocarse en la parte S o SE del valle. No debió tener allí sin embargo mucha intensidad, pues no lo registraron ni los seismógrafos de Manila ni los de Formosa.

9, $9^{h}$ $20^{m}$. **Davao** (SE de Mindanao). Temblor de tierra de intensidad IV–V. Fué también sentido con intensidad III en Sarangani e intensidad II en Butuan: estaciones distantes entre sí más de 370 kilómetros. El epicentro probablemente se hallaba en el extremo SE de Mindanao, al E del golfo de Davao. La intensidad de este temblor probablemente no correspondió a su mucha extensión, puesto que no lo registraron los seismógrafos de Manila.

10, $7^{h}$ $32^{m}$ $24^{s}$. **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección NNE–SSW, intensidad IV, duración 5 segundos.

12, $1^{h}$ $15^{m}$. **Isla Cuyo** (W de las Visayas). Temblor oscilatorio. Dirección WSW–ENE, intensidad IV, duración 3 segundos.

16, $5^{h}$ $4^{m}$ $15^{s}$.* **NE de Luzón.** Temblor de tierra sentido en toda la provincia de Cagayán. En Aparri se notaron oscilaciones de intensidad V en la dirección N–S durante unos 20 segundos; en Tuguegarao se observó la misma clase de movimientos durante 15 segundos, pero su intensidad fué solamente III.

17, $22^{h}$ $5^{m}$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad IV.

18, $20^{h}$ $4^{m}$ $38^{s}$.* **N de Luzón.** Temblor de tierra de intensidad V sentido en las Provincias de Ilocos Norte y Sur, parte N de la Montañosa y Cagayán. El epicentro se hallaba al parecer a unos 450 kilómetros al N de Manila hacia el S del grupo de las Islas Babuyanes (121.5° E, 18.7°N).

20, $5^{h}$ $25^{m}$. **Butuan** (N de Mindanao). Temblor de tierra susultorio y oscilatorio. Dirección SSE–NNW, intensidad IV, duración 15 segundos.

21, $3^{h}$ $35^{m}$. **Butuan** (N de Mindanao). Temblor de tierra susultorio, con ligeras oscilaciones en dirección SW–NE. Distinguiéronse cuatro o cinco choques verticales de intensidad V, duración unos 10 segundos.

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[1] La intensidad de los terremotos se indica conforme a la conocida escala de De Rossi-Forel. Cuanto a la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

25, $23^h$ $42^m$. **Sarangani** (S de Mindanao). Temblor de tierra de intensidad III.

30, $8^h$ $5^m$. **Palanoc** (Masbate). Temblor de tierra de intensidad III.

30, $23^h$ $4^m$ $42^s$.* **Laoag** (NW de Luzón). Temblor de tierra de intensidad IV, duración 5 segundos.

## REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

# APPENDIX TO THE MONTHLY BULLETIN FOR 1911.

# ANNUAL SUMMARY OF METEOROLOGICAL DATA FOR MANILA, DEDUCED FROM TWENTY-FOUR DAILY OBSERVATIONS DURING THE YEAR 1911.

| Month. | Pressure. | | Air temperature. | | | | | | Wind. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Velocity. | | |
| | Mean. | Departure from normal. | Mean. | Departure from normal. | Mean maximum | Departure from normal. | Mean minimum | Departure from normal. | Prevailing direction. | Mean. | Departure from normal. | Hourly maximum. |
| | *mm.* | *mm.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | °*C.* | | *Km.* | *Km.* | *Km.* |
| January | 759.77 | +1.25 | 25 | 0 | 30.9 | + .9 | 20.7 | + .3 | NE quad. | 114.1 | — 52.1 | 17.5 |
| February | 60.84 | — .44 | 24.8 | — .5 | 30.6 | + .1 | 20.4 | + .1 | NE quad. | 162.1 | — 29.3 | 38.5 |
| March | 60.48 | + .04 | 25.5 | —1.1 | 32 | + .3 | 20 | —1.4 | SE quad. | 200.6 | — 25.2 | 27 |
| April | 58.59 | — .76 | 27 | +1.2 | 33.1 | — .7 | 22.4 | + .4 | SW quad. | 202.2 | — 33.8 | 39 |
| May | 58.35 | — .01 | 27.4 | +1.1 | 33.6 | + .2 | 23.2 | — .7 | SE quad. | 153.6 | — 73 | 25 |
| June | 58.18 | + .24 | 27.2 | — .7 | 32.6 | + .3 | 23.4 | — .5 | SW quad. | 215.8 | — 15 | 42 |
| July | 56.14 | —1.15 | 26.4 | — .7 | 30.8 | 0 | 23.4 | — .2 | SW quad. | 399.2 | +124 | 68 |
| August | 56.18 | — 1.18 | 26.8 | + .3 | 31 | + .3 | 24.2 | + .5 | SW quad. | 461.3 | +170.5 | 54 |
| September | 56.95 | — .53 | 26.9 | 0 | 31.6 | +1 | 23.6 | 0 | SW quad. | 280.9 | + 12.6 | 55 |
| October | 60.37 | +1.70 | 26.1 | — .7 | 32.2 | +1.1 | 22.1 | —1 | W quad. | 123.5 | — 56.4 | 22 |
| November | 60.57 | +1.20 | 25.1 | + .8 | 32.1 | +1.8 | 19.9 | —2.3 | E quad. | 150.7 | — 12.9 | 26.5 |
| December | 60.78 | + .34 | 24.9 | — .3 | 32 | +2.2 | 20.1 | —1.1 | E quad. | 170.7 | + 14.8 | 35 |
| Annual | 758.93 | + .16 | 26.1 | — .6 | 31.9 | + .6 | 21.9 | — .6 | | 219.6 | + 2 | 68 |

| Month. | Relative humidity. | | Cloudiness. | | Evaporation under shelter, total. | Sunshine. | | | | Rainfall. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean. | Departure from normal. | Mean. | Departure from normal. | | Total. | | Departure from normal. | | Total. | Departure from normal. | Rainy days. | Departure from normal. |
| | *Per cent.* | *Per cent.* | *0–10.* | *0–10.* | *mm.* | *h.* | *m.* | *h.* | *m.* | *mm.* | *mm.* | | |
| January | 81 | +3 | 5.6 | + .4 | 72.1 | 216 | 05 | +21 | 40 | 8.1 | — 19 | 5 | 0 |
| February | 75.4 | +1.4 | 7 | +2.2 | 90.9 | 143 | 00 | —57 | 00 | 8.5 | 1.9 | 6 | + 3 |
| March | 72.9 | +1 | 4.7 | + .3 | 125.5 | 222 | 35 | — 5 | 58 | 10 | — 8.8 | 4 | + 1 |
| April | 75.1 | +5.2 | 5.8 | +1.8 | 113.6 | 227 | 45 | —36 | 23 | 106.8 | + 74 | 9 | + 5 |
| May | 78.7 | +2.4 | 6.6 | + .9 | 89.7 | 220 | 40 | —11 | 34 | 132 | + 19.4 | 8 | + 2 |
| June | 81.4 | + .4 | 7.5 | + .5 | 77.5 | 147 | 55 | —24 | 35 | 117.2 | —119.6 | 17 | + 1 |
| July | 86.5 | +1.7 | 8.8 | +1.1 | 60.6 | 99 | 50 | —51 | 24 | 698.5 | +302.7 | 26 | + 5 |
| August | 85.1 | + .2 | 8.6 | + .8 | 70 | 127 | 05 | —18 | 01 | 419.4 | + 66.5 | 25 | + 4 |
| September | 84.7 | —1 | 7.6 | — .1 | 68.3 | 146 | 05 | + 7 | 39 | 193.3 | —169.2 | 16 | — 4 |
| October | 81.4 | —2.2 | 6.1 | + .5 | 68.5 | 187 | 10 | +15 | 05 | 9.7 | —179.3 | 6 | —10 |
| November | 75.2 | —7.2 | 4.9 | —1.4 | 97.4 | 232 | 45 | +70 | 30 | 6.1 | —124.1 | 3 | — 9 |
| December | 76.9 | —4.2 | 6.2 | + .1 | 100.8 | 167 | 20 | + 8 | 22 | 8 | — 53.3 | 3 | — 6 |
| Annual | 79.5 | + .1 | 6.6 | + .5 | 1,034.9 | 2,138 | 15 | —81 | 39 | 1,717.6 | —212.6 | 128 | —12 |

# CATALOGUE OF PHILIPPINE EARTHQUAKES, 1911.[1]

| Date. | | Time of occurrence (Greenwich mean-time). | | Region disturbed. | Probable origin of the disturbance. | Total land area of disturbance. | | Intensity (Rossi-Forel). | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Longer axis. | Shorter axis. | | |
| **1911** | | *h.* | *m.* | | | *Km.* | *Km.* | | |
| Jan. | 1 | 15 | 09 | South of Mindanao | Sarangani Island | | | III | |
| | 6 | 12 | 10 | Catbalogan (W Samar) | Local | | | III | |
| | 6 | 20 | 40 | Ilocos Norte | Near the NW coast of Luzon. | 120 | 80 | IV | |
| | 16 | 2 | 24 | South of Mindanao | SE of Sarangani Island | | | III | |
| | 16 | 22 | 57 | Leyte Island and NE Mindanao. | Near the NE coast of Mindanao. | 500 | 170 | V | Registered at Manila and Zikawei. |
| | 18 | 17 | 30 | South of Mindanao | Sarangani Island | | | IV | Registered at Batavia (?). |
| | 19 | 5 | 47 | Eastern Mindanao | Near the E coast | 400 | 150 | V | Registered at Manila, Zikawei, and Batavia. |
| | 22 | 0 | 38 | do | Agusan River Valley | 100 | 70 | IV | |
| | 22 | 15 | 20 | South of Mindanao | Sarangani Island | | | IV | |
| | 26 | 23 | 09 | NE of Leyte Island | Near the S coast of Samar | 100 | 50 | III | |
| | 27 | 20 | 30 | do | do | 150 | 50 | IV | |
| | 30 | 19 | 05 | Western Samar and northern Leyte. | Near Biliran Island | 150 | 100 | III | |
| Feb. | 1 | 22 | 42 | NE Luzon | Near the NE coast | 100 | 50 | III | |
| | 2 | 0 | 40 | South of Mindanao | Sarangani Island | | | III | |
| | 3 | 12 | 30 | Guam (Mariana Islands) | | | | III | |
| | 3 | 20 | 00 | do | | | | III | |
| | 5 | 19 | 55 | N of Mindanao | Butuan Bay | | | III | |
| | 6 | 6 | 30 | Batanes Islands | | | | III | Subterranean rumblings. |
| | 6 | 18 | 10 | Camarines (SE Luzon) | | | | II | |
| | 9 | 5 | 03 | Panay Island | SE part of the Island | 80 | 70 | III | |
| | 13 | 3 | 00 | South of Mindanao | Sarangani Island | | | IV | |
| | 16 | 1 | 45 | SE of Negros | Southern part of the Island. | | | II | |
| | 17 | 2 | 00 | South of Mindanao | Sarangani Island | | | III | |
| | 24 | 0 | 40 | do | do | | | IV | Slight aftershocks at 0$^h$ 43$^m$ and 0$^h$ 48$^m$. |
| | 25 | 12 | 54 | N of Mindanao | N part of the Agusan Valley. | 100 | 100 | IV | Subterranean rumbling from SSW. |
| | 26 | 1 | 20 | South of Mindanao | Sarangani Island | | | III | |
| Mar. | 1 | 5 | 16 | NW of Luzon | Near the NW coast | 120 | 50 | IV | Registered at Manila. Subterranean rumblings. |
| | 5 | 23 | 20 | South of Mindanao | Sarangani Island | | | III | |
| | 6 | 17 | 32 | Eastern Mindanao | Near the SE coast | 400 | 300 | IV | Registered in the Far East and Europe. |
| | 7 | 3 | 04 | Central Luzon | NW of Nueva Vizcaya | 150 | 100 | III | Aftershock at 7$^h$ 44$^m$. |
| | 9 | 5 | 05 | Mindanao Island | N of Illana Bay | 500 | 400 | IV | Registered at Manila, Zikawei, and Batavia. |
| | 9 | 19 | 00 | Cebu | E of Cebu Island | | | IV | |
| | 12 | 18 | 00 | Batangas (S of Luzon) | Near Verde Island | 80 | 40 | III | |
| | 13 | 9 | 37 | Camarines (SE of Luzon) | NE of St. Miguel Bay | 120 | 120 | III | Registered at Manila. Aftershocks at 9$^h$ 48$^m$, 9$^h$ 53$^m$ and 10$^h$ 53$^m$. |
| | 13 | 12 | 50 | do | do | 120 | 120 | III | Registered at Manila. Aftershock at 12$^h$ 53$^m$. |
| | 17 | 13 | 45 | W of Luzon | South Zambales Range | 100 | 80 | III | |
| | 17 | 16 | 30 | South of Mindanao | Sarangani Island | | | II | Aftershock at 17$^h$ 00$^m$. |
| | 20 | 11 | 56 | NE of Leyte | Near the S coast of Samar | | | III | |
| | 21 | 9 | 28 | E Mindanao | Agusan Valley | | | II | |
| | 21 | 22 | 30 | South of Mindanao | Sarangani Island | | | III | Aftershocks at 1$^h$ 00$^m$, 4$^h$ 30$^m$ and 5$^h$ 00$^m$ of the 22d. |
| | 21 | 22 | 51 | NE of Leyte | Near the S coast of Samar | | | II | |
| | 22 | 23 | 23 | E Mindanao | Agusan Valley | 80 | 50 | IV | |
| | 24 | 4 | 15 | South of Mindanao | Sarangani Island | | | II | Aftershocks at 12$^h$ and 14$^h$. |
| | 26 | 13 | 09 | NE of Leyte | Near the S coast of Samar | | | II | |
| | 26 | 14 | 16 | do | do | | | III | |
| | 28 | 21 | 39 | E Mindanao | N Agusan River Valley | 100 | 40 | III | |
| | 29 | 4 | 19 | Central Luzon | W of Nueva Vizcaya | 80 | 70 | III | Registered at Manila. |
| Apr. | 2 | 11 | 05 | South of Mindanao | Sarangani Island | | | II | |
| | 3 | 14 | 00 | NE of Mindanao | Near the NE coast | | | II | |
| | 7 | 6 | 25 | Batangas (S of Luzon) | Near Verde Island | 60 | 40 | III | |
| | 10 | 8 | 52 | NE of Mindanao | Near the NE coast | 100 | 40 | V | |
| | 10 | 18 | 30 | S of Mindanao | Sarangani Island | | | II | |
| | 13 | 0 | 48 | Guam (Mariana Islands) | E of the island | | | III | Registered at Manila and Osaka. |
| | 14 | 12 | 12 | S of Luzon | Taal Volcano | 80 | 80 | III | Registered at Manila. |
| | 17 | 16 | 06 | Guam (Mariana Islands) | | | | III | |
| | 18 | 4 | 25 | E of Mindanao | Agusan Valley | | | III | |
| | 20 | 7 | 26 | S of Mindanao | Sarangani Island | | | III | |
| | 20 | 21 | 17 | N of Mindanao | Butuan Bay | 50 | 40 | III | |
| | 21 | 2 | 30 | S of Mindanao | Sarangani Island | | | III | Registered at Batavia (?). |
| | 24 | 7 | 55 | S of Luzon | Taal Volcano | 50 | 50 | III | Registered at Manila. |
| May | 1 | 9 | 13 | N of Mindanao | N Agusan Valley | 80 | 40 | IV | |
| | 1 | 18 | 35 | Central Luzon | W of Nueva Vizcaya | 60 | 60 | III | Do. |
| | 3 | 3 | 54 | NW of Luzon | Near the Ilocos coast | | | II | |
| | 4 | 19 | 54 | N of Mindanao | N Agusan Valley | 60 | 40 | III | |

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[a] See explanation in MONTHLY BULLETIN OF THE WEATHER BUREAU for December, 1910, page 445.

*Catalogue of Philippine earthquakes, 1911*—Continued.

| Date. | Time of occurrence (Greenwich mean-time). | | Region disturbed. | Probable origin of the disturbance. | Total land area of disturbance. | | Intensity (Rossi-Forel). | Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | | | | Longer axis. | Shorter axis. | | |
| **1911** | *h.* | *m.* | | | *Km.* | *Km.* | | |
| May 7 | 20 | 45 | S of Mindanao | Sarangani Island | | | II | |
| 10 | 17 | 57 | N of Mindanao | N Agusan Valley | 100 | 80 | IV | |
| 12 | 1 | 32 | Batanes Islands | | | | III | Registered at Manila. |
| 13 | 3 | 22 | Southwestern Luzon | Near S of Zambales coast | 400 | 100 | IV | Registered in the Far East and Europe. |
| 18 | 4 | 15 | Guam (Mariana Islands) | | | | II | |
| 18 | 6 | 13 | E of Luzon | Near Polillo Island | 200 | 70 | IV | Registered at Manila. |
| 18 | 15 | 54 | S of Mindanao | Sarangani Island | | | II | |
| 22 | 3 | 10 | Cuyo Island | Off the S coast of Mindoro | | | III | |
| 22 | 3 | 35 | E of Luzon | Near Banahao Volcano | | | II | |
| 23 | 12 | 55 | Camarines (SE of Luzon) | S of San Miguel Bay | | | III | Do. |
| 26 | 15 | 38 | S of Mindanao | Sarangani Island | | | IV | |
| 28 | 9 | 47 | W of Luzon | Near S Zambales. | 200 | 100 | III | Do. |
| 28 | 11 | 19 | Virac (Catanduanes Island). | N of San Bernardino Strait. | | | III | Do. |
| June 2 | 15 | 41 | SE Luzon, Samar and N Leyte. | Near the N coast of Samar | 400 | 350 | III | Registered in the Far East and Asia. |
| 3 | 13 | 48 | Mindoro Sea | Off the S coast of Mindoro | | | IV | Registered at Manila. |
| 3 | 13 | 51 | Catanduanes, Samar and N Leyte. | Near the N coast of Samar | 300 | 220 | III | Do. |
| 3 | 23 | 51 | Cuyo Island | Off the S coast of Mindoro | | | III | |
| 5 | 9 | 40 | N of Mindanao | N Agusan Valley | | | III | Do. |
| 6 | 9 | 12 | Guam (Mariana Islands) | | | | III | |
| 7 | 18 | 49 | Cuyo Island | Off the S coast of Mindoro | | | IV | Do. |
| 10 | 7 | 03 | Guam (Mariana Islands) | | | | IV | |
| 12 | 19 | 34 | E Leyte and S Samar | Near the S coast of Samar | 100 | 80 | III | |
| 14 | 15 | 58 | S of Mindanao | Sarangani Island | | | II | |
| 15 | 14 | 29 | NE of Luzon | Off the NE coast of Luzon. | 150 | 120 | III | Do. |
| 18 | 18 | 52 | S of Mindanao | Sarangani Island | | | II | |
| 19 | 12 | 02 | Batanes Islands | | | | II | Repeated at $13^h$ $23^m$ with intensity III. |
| 22 | 19 | 27 | S Luzon and N Mindoro | Off the NE coast of Mindoro. | 150 | 150 | IV | Registered at Manila. |
| 27 | 0 | 06 | N of Mindanao | N Agusan Valley | | | III | |
| July 2 | 16 | 10 | Camarines | S of St. Miguel Bay | | | III | Do. |
| 7 | 10 | 47 | Laoag (NW of Luzon) | Near the NW coast | | | II | |
| 12 | 4 | 10 | Eastern Mindanao | Agusan Valley | 1,000 | 800 | VIII<br>IX | Registered in all the observatories of the globe. Frequent aftershocks during July and August. |
| 15 | 20 | 38 | Tacloban (NE of Leyte) | Local | | | III | |
| 19 | 3 | 30 | S of Mindanao | Sarangani Island | | | II | |
| 19 | 20 | 23 | Eastern Mindanao | Agusan Valley | 600 | 500 | VI | Registered in the Far East and Europe. |
| 21 | 11 | 00 | do | do | 300 | 150 | IV | Registered at Manila, Zikawei and Batavia. |
| 21 | 20 | 36 | Western Mindanao | W of Basilan Island | | | IV | |
| 22 | 5 | 19 | Eastern Mindanao | Agusan Valley | 300 | 150 | IV | Registered at Manila. |
| 24 | 3 | 36 | S of Mindanao | Sarangani Island | | | III | |
| 25 | 4 | 15 | NW of Luzon | Near the W coast ($\phi=16^\circ.5$ N). | 40 | 15 | III | |
| 27 | 22 | 30 | S of Mindanao | Sarangani Island | | | II | |
| 30 | 10 | 02 | Central Luzon | W of Nueva Vizcaya Province. | 50 | 40 | III | |
| Aug. 3 | 9 | 01 | Eastern Mindanao | Agusan Valley | 200 | 100 | IV | |
| 4 | 1 | 15 | Southern Mindanao | NE Celebes Sea | | | III | Registered at Batavia (?). |
| 10 | 2 | 45 | Eastern Mindanao | Agusan Valley | 100 | 80 | III | |
| 12 | 10 | 10 | S of Mindanao | Sarangani Island | | | IV | |
| 13 | 1 | 10 | Ormoc (W of Leyte) | Near the W coast | 60 | 20 | III | |
| 13 | 5 | 57 | Mindoro Island | do | 150 | 100 | III | Registered at Manila. |
| 14 | 20 | 54 | Eastern Mindanao | Agusan Valley | 400 | 300 | IV | Do. |
| 15 | 4 | 03 | Romblon Island | | | | III | Subterranean noises. |
| 16 | 22 | 45 | Western Carolines | About $\phi=10^\circ$ N; $\lambda=140^\circ$ E | | | V | Registered all over the world. |
| 17 | 2 | 33 | Eastern Mindanao | Agusan Valley | 100 | 80 | III | |
| 17 | 7 | 54 | Batanes Islands and N Luzon. | Bashi Channel | 500 | | IV | Registered at Manila and Taihoku. Subterranean noises. |
| 18 | 2 | 56 | Eastern Mindanao | Agusan Valley | 450 | 300 | VI | Registered at Manila. |
| 19 | 0 | 05 | Southeastern Luzon | NE of Lagonoy Gulf | 180 | 160 | V-VI | Do. |
| 19 | 23 | 54 | do | do | 100 | 80 | IV | Do. |
| 20 | 23 | 30 | S of Mindanao | Sarangani Island | | | III | |
| 22 | 0 | 10 | Nueva Caceres (Camarines). | Local | | | II-III | |
| 22 | 1 | 21 | Southeastern Luzon | NE of Lagonoy Gulf | 120 | 100 | III | Registered at Manila. Aftershock at $4^h$ $09^m$. |
| 22 | 5 | 33 | do | do | 200 | 160 | V | Registered at Manila. Aftershock at $6^h$ $12^m$. |
| 22 | 6 | 27 | do | do | 300 | 250 | VI-VII | Registered in the Far East. |
| 22 | 10 | 36 | Aparri (NE of Luzon) | Near the N coast | 80 | 40 | III | Registered at Manila. |
| 22 | 20 | 23 | Southeastern Luzon | W of Camarines | 90 | 70 | II-III | Repeated at $9^h$ $12^m$ of the 23d. Both quakes registered at Manila. |
| 22 | 21 | 46 | Eastern Mindanao | Agusan Valley | 200 | 100 | IV | |
| 24 | 1 | 05 | Paracale (SE of Luzon) | NW of Camarines | | | IV | Sharp seismic sounds. |
| 24 | 3 | 42 | S of Mindanao | Sarangani Island | | | III | |
| 25 | 3 | 33 | Eastern Mindanao | Agusan Valley | 250 | 140 | V | Repeated at $4^h$ $35^m$. |
| 29 | 19 | 54 | do | do | 200 | 140 | IV | |
| 31 | 19 | 21 | Guam (Mariana Islands) | | | | III | |

*Catalogue of Philippine earthquakes, 1911*—Continued.

| Date. | Time of occurrence (Greenwich mean-time). | | Region disturbed. | Probable origin of the disturbance. | Total land area of disturbance. | | Intensity (Rossi-Forel). | Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | | | | Longer axis. | Shorter axis. | | |
| **1911** | *h.* | *m.* | | | *Km.* | *Km.* | | |
| Sept. 1 | 0 | 38 | Laoag (NW of Luzon) | Local | | | III | |
| 2 | 8 | 35 | Eastern Mindanao | Agusan Valley | 100 | 70 | IV-V | Registered at Manila. Aftershock, III, at $9^{h} 30^{m}$. |
| 2 | 22 | 37 | do | do | 90 | 70 | IV | Aftershock, II-III at $10^{h} 58^{m}$ of the 3d. |
| 5 | 2 | 09 | Western Leyte | Near the W coast | 140 | 80 | VII | Registered at Manila. |
| 6 | 2 | 15 | Eastern Mindanao | Agusan Valley | 250 | 100 | V | Do. |
| 6 | 13 | 20 | S of Mindanao | Sarangani Island | | | III | |
| 7 | 12 | 02 | Western Samar | Near Biliran Island | 80 | 80 | III | |
| 7 | 20 | 57 | Western Leyte | Near the W coast | 100 | 40 | IV | |
| 8 | 16 | 13 | do | do | | | III | |
| 9 | 22 | 13 | Eastern Mindanao | Agusan Valley | 80 | 70 | III | |
| 11 | 9 | 36 | Vigan (NW of Luzon) | Local | | | III | |
| 11 | 19 | 05 | Western Leyte | Near the W coast | 120 | 40 | III-IV | |
| 12 | 6 | 38 | do | do | | | III | Repeated at $10^{h} 54^{m}$. |
| 13 | 15 | 35 | Romblon Island | Local | | | II-III | |
| 14 | 4 | 03 | Yap (Western Carolines) | | | | III | |
| 14 | 15 | 53 | Eastern Mindanao | Agusan Valley | 200 | 100 | IV | Registered at Manila. Aftershock at $16^{h} 06^{m}$. |
| 17 | 8 | 38 | Western Leyte | Near the W coast | | | IV | Aftershock at $21^{h} 30^{m}$. |
| 17 | 20 | 32 | Eastern Mindanao | Agusan Valley | 200 | 100 | IV | |
| 18 | 13 | 36 | NE of Luzon | Off the NE coast | 150 | 60 | IV | Registered at Manila and Taihoku. |
| 19 | 17 | 10 | S of Mindanao | Sarangani Island | | | III | |
| 19 | 22 | 07 | Guam (Mariana Islands) | | | | III | |
| 21 | 13 | 58 | Samar, Leyte and NE Mindanao. | Off the S coast of Samar | 400 | 250 | V | Registered at Manila. Aftershock $14^{h} 43^{m}$. |
| 22 | 18 | 19 | S Samar and E Leyte | do | 100 | 100 | III | |
| 24 | 18 | 57 | Eastern Mindanao | Agusan Valley | 400 | 200 | V-VI | Registered in the Far East. |
| 25 | 13 | 49 | do | do | 200 | 150 | IV | |
| 26 | 17 | 50 | W Mindanao and Jolo | Near the W coast of Mindanao | | | IV | |
| 27 | 13 | 37 | Eastern Mindanao | Agusan Valley | 100 | 100 | III | |
| 28 | 0 | 0 | S of Mindanao | Sarangani Island | | | II | |
| 29 | 17 | 44 | Guam (Mariana Islands) | | | | IV | |
| Oct. 1 | 17 | 20 | Guam (Mariana Islands) | | | | III | |
| 4 | 20 | 21 | Tacloban (NE of Leyte) | Local | | | II | |
| 6 | 10 | 36 | Eastern Mindanao | Agusan Valley | 150 | 100 | IV | Registered at Manila. |
| 7 | 3 | 30 | SW of Mindanao | NE Celebes Sea | 250 | 120 | IV | |
| 7 | 23 | 45 | do | do | | | III | Aftershock at $4^{h} 10^{m}$ of the 8th. |
| 9 | 13 | 30 | do | do | | | IV | |
| 12 | 5 | 56 | NW of Luzon | Near the NW coast | 40 | 10 | III | |
| 12 | 21 | 37 | Eastern Mindanao | Agusan Valley | 200 | 150 | IV | |
| 12 | 21 | 38 | NE of Luzon | Near the NE coast | 80 | 60 | III | Registered at Manila. |
| 14 | 3 | 02 | do | do | 100 | 90 | IV | Do. |
| 15 | 15 | 00 | S of Mindanao | Sarangani Island | | | IV | |
| 17 | 16 | 17 | Tacloban (NE of Leyte) | Local | | | II | |
| 20 | 14 | 08 | Eastern Luzon | S of Nueva Vizcaya | 120 | 90 | III | Do. |
| 22 | 4 | 04 | SW of Mindanao | Basilan Island | | | II | |
| 22 | 12 | 45 | Guam (Mariana Islands) | | | | III | |
| 25 | 13 | 47 | S of Mindanao | Sarangani Island | | | IV | |
| 26 | 11 | 54 | Eastern Mindanao | Agusan Valley | 500 | 200 | IV | Registered at Manila and Batavia. |
| 26 | 21 | 32 | do | do | 800 | 300 | VI | Do. |
| 28 | 9 | 38 | Western Luzon | S of Central Range | | | III | Registered at Manila. |
| Nov. 2 | 8 | 07 | do | Zambales Range | | | II | |
| 5 | 0 | 40 | N of Mindanao | N Agusan Valley | | | III | |
| 6 | 15 | 27 | Central Luzon | S of Central Range | 300 | 300 | VI | Do. |
| 8 | 1 | 00 | S of Mindanao | Sarangani Island | | | IV | |
| 10 | 11 | 02 | Southern Samar | Near the S coast | | | III | |
| 10 | 21 | 45 | Tacloban (NE of Leyte) | Near Biliran Island | 50 | 50 | III | Do. |
| 11 | 12 | 49 | Northeastern Luzon | Near the NE coast | 80 | 30 | IV | Do. |
| 13 | 2 | 00 | S of Mindanao | Sarangani Island | | | IV | |
| 19 | 2 | 12 | SE of Mindanao | Off the SE coast | | | V | Do. |
| 19 | 14 | 50 | S Samar and NE Leyte | Near the S coast of Samar | 150 | 100 | IV | |
| 19 | 18 | 16 | Cuyo Island | Off the S coast of Mindoro | | | III | |
| 20 | 10 | 01 | Camarines | S of St. Miguel Bay | | | III | Do. |
| 21 | 19 | 23 | Northern Luzon | S of Babuyanes Islands | 300 | 200 | VI | Registered in the Far East. |
| 25 | 8 | 19 | S of Mindanao | Sarangani Island | | | III | |
| 25 | 18 | 03 | Tacloban (NE of Leyte) | Near the N coast | 50 | 50 | III | |
| 29 | 12 | 24 | Northeastern Luzon | Near the NE coast | | | IV | |
| Dec. 1 | 18 | 34 | Aparri (NE of Luzon) | do | | | III | |
| 4 | 8 | 56 | Butuan (N of Mindanao) | S of Butuan Bay | 60 | 40 | III | |
| 4 | 19 | 30 | S of Mindanao | Sarangani Island | | | III | |
| 5 | 4 | 26 | Northeastern Luzon | Near the NE coast | 200 | 100 | V | Registered at Manila. |
| 5 | 19 | 45 | S of Mindanao | Sarangani Island | | | IV | |
| 7 | 19 | 00 | Butuan (N of Mindanao) | N Agusan Valley | 50 | 40 | III | |
| 8 | 13 | 24 | Eastern Mindanao | S Agusan Valley | 300 | 100 | IV | |
| 9 | 1 | 20 | SE of Mindanao | Near the SE coast | 400 | 200 | V | |
| 9 | 23 | 32 | Northeastern Luzon | Near the NE coast | 150 | 100 | IV | Do. |
| 11 | 17 | 15 | Cuyo Island | Off the S coast of Mindoro | | | IV | |
| 15 | 21 | 04 | Northeastern Luzon | Near the NE coast | 250 | 200 | V | Do. |
| 17 | 14 | 05 | S of Mindanao | Sarangani Island | | | IV | |
| 18 | 12 | 05 | Northern Luzon | S of Babuyanes Islands | 300 | 250 | V | Do. |
| 19 | 21 | 25 | Butuan (N of Mindanao) | N Agusan Valley | 80 | 40 | IV | |
| 20 | 19 | 35 | do | do | 100 | 80 | V | |
| 25 | 15 | 42 | S of Mindanao | Sarangani Island | | | III | |
| 30 | 0 | 05 | Palanoc (Masbate Island) | Local | | | III | |
| 30 | 15 | 05 | NW of Luzon | Near the NW coast | 100 | 40 | IV | Do. |

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## MANILA CENTRAL OBSERVATORY

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# BULLETIN FOR DECEMBER, 1911.

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PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.
DIRECTOR OF THE WEATHER BUREAU

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